DOCUMENT RESUME

ED 037 579 VT 010 731

TITLE	Health Manpower Source Book. Manpower Supply and Educational Statistics for Selected Health Occupations: 1968. Public Health Service Publication Number 263, Section 20.
INSTITUTION	National Inst. of Health (DHEW), Bethesda, Md. Bureau of Health Professions Education and Manpower Training.
PUB DATE	69
NOTE	181p.
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (PHS Pub No. 263, Section 20, $1.75)
EDRS PRICE	EDRS Price MF-$0.75 HC Not Available from EDRS.
DESCRIPTORS	Dentists, *Health Facilities, *Health Occupations, *Health Occupations Education, *Manpower Utilization, Maps, Nurses, Optometrists, Pharmacists, Physicians, Public Health, *Statistical Surveys, Tables (Data), Veterinary Medicine

ABSTRACT

This publication is a compilation of statistics on supply and education of health manpower in medicine and osteopathy, dentistry, optometry, pharmacy, podiatry, veterinary medicine, nursing, public health, and eight selected allied health occupations. The material is organized by occupations and the following information is presented for each occupation (when available): (1) trends in the number of schools or programs, students and graduates, (2) geographic distribution of schools or programs, students, and graduates for a current year, (3) trends in the number of persons in the profession or occupation and in ratio to population, (4) distribution of the number of persons in profession or occupation and ratio to population for a current year, by State, and (5) projections of supply. A total of 126 tables and 16 figures are included in the report. Related documents are available as ED 018 614 and ED 021 993. (BC)

(C1)

ED037579

health manpower SOURCE BOOK

SECTION 20

manpower supply and educational statistics for selected health occupations

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health
Bureau of Health Professions Education and Manpower Training

VT010731

ED037579

HEALTH MANPOWER SOURCE BOOK

20. Manpower Supply and Educational Statistics for Selected Health Occupations: 1968

Prepared by

Manpower Resources Staff

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health
Bureau of Health Professions Education and Manpower Training

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Public Health Service Publication Number 263, Section 20

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1969

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $1.75

Contents

Page

Preface.......... xiii

HEALTH OCCUPATIONS AND THE HEALTH SERVICES INDUSTRY.......... 1

Table 1. Persons in selected health occupations, as reported in the decennial population census: 1900–60.......... 2

Table 2. Persons in the health services industry in relation to total labor force in the United States: 1940–60.......... 3

Table 3. Persons employed in the health services industry in relation to persons in selected health occupations: 1960... 4

MEDICINE AND OSTEOPATHY.......... 5

Schools, Students, and Graduates

Table 4. Medical schools, students, and graduates: selected years 1810–1930.......... 6

Table 5. Medical schools, students, and graduates: selected years 1930–31 through 1967–68.......... 7

Table 6. Schools of osteopathic medicine, students, and graduates: selected years 1930–31 through 1967–68.......... 7

Table 7. New and developing medical schools and number of schools in operation: 1930–31 through 1971–72.......... 8

Table 8. Estimated number of medical and osteopathic students and graduates: 1968–69 through 1974–75.......... 9

Table 9. Medical schools, students, and graduates, by State: 1967–68.......... 10

Table 10. Schools of osteopathic medicine, students, and graduates, by State: 1967–68.......... 13

Table 11. U.S. students in foreign medical schools: selected years 1954–55 through 1966–67.......... 14

Page

Applicants

Table 12. Medical school applicants: selected years 1947–48 through 1967–68 15

Table 13. Applicants to schools of osteopathic medicine: selected years 1947–48 through 1967–68 16

Table 14. Medical school applicants in relation to young people and to college graduates: selected years 1947–48 through 1967–68 16

Table 15. Applicants to schools of osteopathic medicine in relation to young people and to college graduates: selected years 1947–48 through 1967–68 17

Expenditures of Medical Schools and Schools of Osteopathic Medicine

Table 16. Medical school expenditures for basic operations and sponsored reseach: selected years 1947–48 through 1966–67 19

Table 17. Budgets for schools of osteopathic medicine by source of funds: 1960–61 through 1966–67 20

Table 18. Percent distribution of budgets for schools of osteopathic medicine by source of funds: 1960–61 through 1966–67. 20

Table 19. Medical school expenditures for basic operations by source of funds: selected years 1956–57 through 1966–67 21

Table 20. Percent distribution of medical school expenditures for basic operations by source of funds: selected years 1956–57 through 1966–67 22

Table 21. Medical school expenditures for sponsored research by source of funds: selected years 1956–57 through 1966–67 23

Table 22. Average expenditure per medical school for basic operations and sponsored research: selected years 1947–48 through 1966–67 24

Table 23. Average total budget per school of osteopathic medicine and average amount of Federal and other support: 1960–61 through 1966–67 24

Table 24. Average annual percent increase in medical school expenditures for basic operations and sponsored research: 1956–57 through 1966–67 25

Table 25. Average annual percent increase in total budgets of schools of osteopathic medicine and in Federal and other support: 1960–61 through 1966–67 25

Approved Internships and Residencies

Page

Table 26. Approved internships and residencies, offered and filled: selected years 1941–42 through 1967–68 26

Table 27. Proportion of approved internships and residencies filled and proportion filled by foreign graduates: selected years 1950–51 through 1967–68 27

Table 28. Interns and residents on duty in approved positions in each State: September 1, 1967 28

Physicians, Total and Active

Table 29. Number of physicians (M.D.) and physician/population ratios: selected years 1870–1929 31

Table 30. Number of physicians (M.D.) and physician/population ratios: selected years 1931–59 32

Table 31. Number of active physicians (M.D.) and those in training programs, reported and adjusted figures: selected years 1931–59 33

Table 32. Number of physicians and physician/population ratios: selected years 1950–67 34

Physicians by Type of Practice

Table 33. Number of physicians, by type of practice: selected years 1950–67 35

Table 34. Number of physicians in private practice and physician/population ratios: selected years 1950–67 36

Table 35. Number of active non-Federal physicians, by type of practice: 1963–67 37

Physicians Providing Patient Care

Table 36. Number of physicians providing patient care: 1963–67 ... 38

Table 37. Number of Federal and non-Federal physicians providing patient care: 1963–67 39

Table 38. Number of physicians providing patient care and physician/population ratios: 1963–67 40

Federal Physicians

Table 39. Number of Federal physicians, by type of practice: 1963–67 41

Table 40. Number of Federal physicians (M.D.), by branch of service: 1963–67 41

Page

Physicians by Specialty

Table 41. Number of active physicians (M.D.) in selected specialties and in training programs: selected years 1931–60 . . 42

Table 42. Number of active physicians (M.D.), by specialty: 1963–67 44

Table 43. A comparison of changes in type of practice and specialty due to new definitions, for active non-Federal physicians (M.D.): 1966 46

Table 44. Number of active physicians, by specialty and type of practice: December 31, 1967 48

Physicians by Location

Table 45. Number of physicians, by activity status and location: 1967 50

Table 46. Number of non-Federal physicians (M.D. and D.O.) and physician/population ratios in each State: 1967 51

Table 47. Number of non-Federal physicians (M.D.) and non-Federal physicians (D.O.) and physician/population ratios in each State: 1967 54

Table 48. Number of non-Federal physicians providing patient care and physician/population ratios in each State: 1967 . . . 57

Table 49. Number of non-Federal physicians providing patient care, by type of practice in each State: 1967 59

Table 50. Number of active non-Federal physicians (M.D.) in selected specialities in each State: 1967 62

Table 51. Active non-Federal physicians (M.D.) per 100,000 civilian population in selected specialities in each State: 1967 65

Table 52. Active non-Federal physicians (M.D.) per 100,000 population, by type of county and type of practice: selected years 1959–67 68

Licentiates and Source of Physicians

Table 53. Licentiates representing additions to the medical profession: selected years 1935–67 69

Table 54. Physicians (M.D.), by location of medical school from which graduated: 1959 and 1967 70

Physician Projections

Table 55. Estimated supply of physicians: 1968–75 70

Page

DENTISTRY 71

Dental Schools, Students, and Graduates

Table 56. Dental schools and graduates: selected years 1840–1930 . 71

Table 57. Dental schools, students, and graduates: selected years 1930–31 through 1968–69 72

Table 58. New dental schools and number of schools in operation: 1950–51 through 1974–75 73

Table 59. Estimated number of dental students and graduates: 1969–70 through 1974–75 74

Table 60. Dental schools, students, and graduates, by State: 1968 . . 75

Applicants to Dental Schools

Table 61. Dental school applicants: 1955–56 and 1960–61 through 1967–68 78

Table 62. Dental school applicants in relation to young people and to college graduates: 1955–56 and 1960–61 through 1967–68 78

Dentists, Total and Active

Table 63. Number of active dentists and dentist/population ratios: selected years 1850–1950 79

Table 64. Number of dentists and dentist/population ratios: selected years 1950–68 80

Dentists by Specialty

Table 65. Number of dental specialists: selected years 1955–68 80

Dentists by Location

Table 66. Number of non-Federal dentists and dentist/population ratios in each State: 1968 81

Table 67. Number of non-Federal dental specialists and dentist/population ratios in each State: 1968 84

Dentist Projections

Table 68. Estimated supply of dentists: 1969–75 86

OPTOMETRY 87

Optometry Schools, Students, and Graduates

Table 69. Schools of optometry, students, and graduates: selected years 1931–32 through 1967–68 87

Page

Table 70. Estimated number of optometric students and graduates: 1968–69 through 1971–72 88

Table 71. Schools of optometry, students, and graduates, by State: 1967–68 88

Optometrists

Table 72. Number of licensed optometrists and optometrist/population ratios: selected years 1930–67 90

Table 73. Number of licensed optometrists and optometrist/population ratios in each State: 1967 91

PHARMACY 93

Pharmacy Schools, Students, and Graduates

Table 74. Accredited schools of pharmacy, students, and graduates: selected years 1931–32 through 1967–68 94

Table 75. Estimated number of pharmacy students and graduates: 1968–69 through 1971–72 94

Table 76. Accredited schools of pharmacy, students, and graduates, by State: 1967–68 95

Pharmacists

Table 77. Number of active pharmacists and pharmacist/population ratios: selected years 1900–67 99

Table 78. Active pharmacists by type of practice and pharmacist/population ratios in each State: 1967 100

PODIATRY 102

Podiatry Schools, Students, and Graduates

Table 79. Schools of podiatry, students, and graduates: selected years 1951–52 through 1967–68 102

Table 80. Estimated number of podiatry students and graduates: 1968–69 through 1971–72 103

Table 81. Schools of podiatry, students, and graduates, by State: 1967–68 103

Podiatrists

Table 82. Number of registered podiatrists and podiatrist/population ratios: selected years 1950–67 105

Table 83. Number of registered podiatrists and podiatrist/population ratios in each State: 1967 106

Page

VETERINARY MEDICINE 108

Veterinary Schools, Students, and Graduates

Table 84. Schools of veterinary medicine, students, and graduates: selected years 1937–38 through 1967–68.......... 108

Table 85. Estimated number of veterinary medical students and graduates: 1968–69 through 1971–72.......... 108

Table 86. Schools of veterinary medicine, students, and, graduates, by State: 1968–69.......... 109

Veterinarians

Table 87. Number of veterinarians and veterinarian/population ratios: selected years 1930–68.......... 111

Table 88. Number of active veterinarians, by type of practice: January 1968.......... 112

Table 89. Number of veterinarians in each State: January 1968.... 113

NURSING—R. N. 114

Nursing Schools, Students, and Graduates

Table 90. Nursing schools, students, and graduates: selected years 1880–1948.......... 114

Table 91. Nursing programs, students, admissions, and graduates, by type of program: selected years 1949–68.......... 115

Table 92. Estimated nursing programs, students, admissions, and graduates, by type of program: 1968–69 through 1974–75.......... 116

Table 93. Nursing programs, admissions, enrollment, and graduates by State: 1966–67.......... 118

Table 94. Nursing school admissions in relation to young people and to high school graduates: selected years 1949 through 1967–68.......... 120

Nurses. Total and Active

Table 95. Number of nurses and nurse/population ratios: selected years 1910–68.......... 121

Table 96. Active nurses, Federal and non-Federal: selected years 1949–68.......... 122

Nurses by Field of Practice

Table 97. Active nurses by field of practice: selected years 1949–66. 123

Nurses by Location

Table 98. Number of active nurses and nurse/population ratios in each State: 1966.......... 124

Table 99. Estimated supply of active nurses: 1969–75.......... 127

Page

SELECTED ALLIED HEALTH OCCUPATIONS

SELECTED ALLIED HEALTH OCCUPATIONS 128

Dental Assisting 128

Table 100. Programs for training dental assistants, students, and graduates: 1961–62 through 1968–69 129

Table 101. Estimated number of programs for training dental assistants, students, and graduates: 1969–70 and 1974–75 129

Table 102. Programs for training dental assistants, students, and graduates, by State: 1968 130

Dental Hygiene 134

Table 103. Schools for training dental hygienists, students, and graduates: selected years 1930–31 through 1968–69 134

Table 104. Estimated number of schools for training dental hygienists, students, and graduates: 1969–70 and 1974–75 134

Table 105. Schools for training dental hygienists, students, and graduates, by State: 1968 135

Dental Laboratory Technology 138

Table 106. Programs for training dental laboratory technicians, students, and graduates: 1959–60 through 1968–69 138

Table 107. Estimated number of programs for training dental laboratory technicians, students, and graduates: 1969–70 and 1974–75 138

Table 108. Programs for training dental laboratory technicians, students, and graduates, by State: 1968 139

Medical Record Librarianship 140

Table 109. Accredited programs for medical record librarians, students, and graduates: selected years 1943 through 1967–68 140

Table 110. Accredited programs for medical record librarians, students, and graduates, by State: 1966–67 141

Table 111. Number of medical record librarians: selected years 1950–67 143

Medical Technology 144

Table 112. Accredited programs of medical technology, students, and graduates: selected years 1936 through 1967–68 144

Table 113. Accredited programs of medical technology, students, and graduates, by State: 1966–67 145

Table 114. Number of registered medical technologists: selected years 1930–67 146

Page

Occupational Therapy.......... 147

Table 115. Approved courses in occupational therapy, students, and graduates: selected years 1936 through 1967–68....... 147

Table 116. Approved courses in occupational therapy, students, and graduates, by State: 1967.......... 148

Table 117. Number of registered occupational therapists: selected years 1935–67.......... 150

Table 118. Number of registered occupational therapists and occupational therapist/population ratios in each State: 1966. 151

Physical Therapy.......... 153

Table 119. Accredited programs of physical therapy, students, and graduates: selected years 1936 through 1967–68....... 153

Table 120. Accredited programs of physical therapy, students, and graduates, by State: 1967.......... 154

Table 121. Number of active physical therapists: selected years 1930–67.......... 156

Radiologic Technology.......... 157

Table 122. Approved schools of radiologic technology, students, and graduates: selected years 1946 through 1967–68....... 157

Table 123. Approved schools of radiologic technology, students, and graduates, by State: 1966–67.......... 158

Table 124. Number of active radiologic technologists and technicians: selected years 1940–67.......... 159

Table 125. Number of registered radiologic technologists and technicians and ratios to population in each State: 1967... 160

PUBLIC HEALTH.......... 162

Table 126. Accredited schools of public health and degrees awarded: selected years 1949–50 through 1967–68.......... 162

Table 127. Accredited schools of public health and degrees awarded, by State: 1967–68.......... 163

Figures

Figure number — Page

1. Admissions to schools of medicine, dentistry, and nursing: 1950–74 xv
2. Relation between number of persons in selected health occupations and number in the health services industry: 1960 4
3. Medical schools and schools of osteopathic medicine in operation and in development in the United States: 1968–69 13
4. Medical school expenditures and Federal support: selected years 1947–48 through 1966–67 19
5. Sources of medical school income for basic operations: selected years 1947–48 through 1966–67 22
6. Active physicians (M.D.) by type of practice: selected years 1931–67 43
7. Active non-Federal physicians in relation to population in each State: 1967 56
8. Dental schools in operation and in development in the United States: 1968–69 77
9. Active non-Federal dentists in relation to population in each State: 1968 83
10. Schools of optometry in the United States: 1968–69 89
11. Schools of pharmacy in the United States: 1968–69 98
12. Schools of podiatry in the United States: 1968–69 104
13. Schools of veterinary medicine in the United States: 1968–69 ... 110
14. Admissions to schools of nursing by type of program: 1950–74 .. 117
15. Active nurses in relation to population in each State: 1966 126
16. Schools of public health in the United States: 1968–69 164

Preface

This publication is a compilation of statistics on the supply and education of health manpower in those professions and occupations for which the Bureau of Health Professions Education and Manpower Training has legislative responsibility under the Health Professions Educational Assistance Act, the Nurse Training Act, the Allied Health Professions Personnel Training Act, and the Public Health Service Act, Sections 306 and 309.

Aside from the first few tables, the material is organized by occupation and covers each health profession for which educational support is available under the Health Professions Educational Assistance Act (physicians—M.D. and D.O., dentists, optometrists, pharmacists, podiatrists, and veterinarians) and under the Nurse Training Act. In addition, selected occupations for which schools may receive support under the Allied Health Professions Personnel Training Act are included. Some data on public health training are also included.

Data presented differ among the professions and occupations but the following types of information are shown insofar as available:

1. Trends in the number of schools or programs, students, and graduates;
2. Geographic distribution of schools or programs, students, and graduates for a current year;
3. Trends in the number of persons in the profession or occupation and in ratios to population;
4. Distribution of number of persons in the profession or occupation and ratios to population for a current year, by State;
5. Projections of supply.

One purpose of this publication is to update the statistics on health manpower which appeared in "Health Manpower Perspective: 1967" (Public Health Service Pub. No. 1667). It will supplement data in "Health Resources Statistics, 1968" (Public Health Service Pub. No. 1509). The latter report does not present data prior to 1950 nor projections into the future. The present report presents historical data back into the 19th century in some instances and supplies projections of some material to 1975.

Data on numbers of persons in the health professions compiled by professional associations are not entirely comparable with respect to either the geographic area covered or the date of the information. The figures for physicians published by the American Medical Association include persons in the 50 States, the District of Columbia, Puerto Rico, and the outlying areas of the United States. The figures for physicians published by the American Osteopathic Association, for dentists by the American Dental Association, and the nursing figures estimated by the Interagency Conference on Nursing Statistics all include persons in the 50 States and the District of Columbia.

At present, data on physicians are as of December 31st; data on dentists are as of July 1st; data on nurses are as of January 1st. Thus figures on health professions for the same year do not necessarily refer to the same time.

The Health Manpower Source Book series (Public Health Service Pub. No. 263), of which this publication is the latest section, is a miscellaneous collection of reports on various aspects of health manpower. Some sections deal with a single profession or occupation, some with several, and some with both health occupations and the health service industry data from decennial censuses. The former Division of Public Health Methods in the Office of the Surgeon General of the Public Health Service was largely responsible for the first 19 sections of the series. The present publication is a continuation of the series by the since-established Bureau of Health Professions Education and Manpower Training in the National Institutes of Health.

Many of the statistics presented in the present report were collected in the spring of 1968 in preparation for the Senate and House of Representatives hearings on the Health Manpower Act of 1968.

The material has been organized, edited, and prepared for publication by Marion Altenderfer of the Manpower Resources Staff, Bureau of Health Professions Education and Manpower Training with the advice and assistance of the following persons:

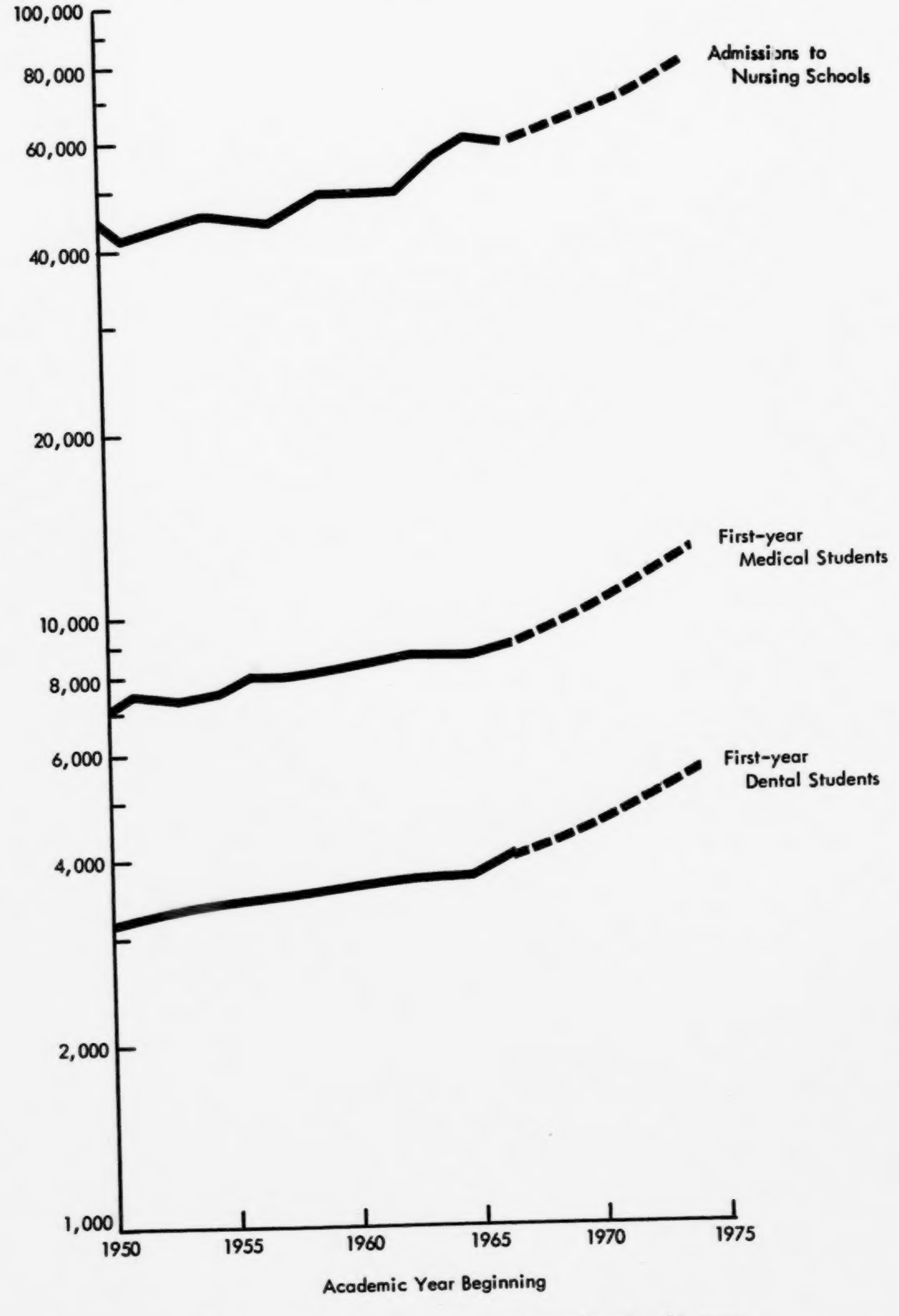
Division of Allied Health Manpower
  Maryland Y. Pennell
  Lucy Kramer
Division of Dental Health
  Stanley Lotzkar, D.D.S.
  Donald W. Johnson, D.D.S.

Division of Nursing
  Eugene Levine, Ph. D.
  Helen Hudson
Division of Physician Manpower
  Arthur L. Hauser
  Mary D. Overpeck

Figure 1

Admissions to schools of medicine, dentistry, and nursing have been increasing steadily since 1950. Between now and 1974 the increases are expected to continue at an accelerated pace largely as a result of Federal financial support under the Health Professions Educational Assistance Act and the Nurse Training Act.

FIGURE 1.—Admissions to schools of medicine, dentistry, and nursing: 1950–74.



Semilog scale: Equal slopes represent equal rates of increase.

Health Occupations and the Health Services Industry

Data on the major health occupations and professions are available from the decennial population census for 1900–60. Data on the health services industry are available since 1940.

These data are subject to certain limitations. Most health occupations include comparatively small numbers of persons and therefore small reporting errors can lead to proportionately large errors in the counts. It is sometimes difficult for census enumerators to distinguish among some categories of persons, e.g., "doctors" of medicine, osteopathy, dentistry, optometry, podiatry, etc.

In addition to these special problems with statistics on health occupations there is the general problem of historical comparability. Occupational groupings change with changing social and economic conditions. Differences in the scope of the several censuses of occupations, in the enumeration, in the processing of the returns, and in the presentation or results, lead to occupational statistics which frequently are not directly comparable. In several of its publications on occupational trends, the Bureau of the Census has attempted to overcome these limitations as much as is possible.

Table 1

The numbers of persons in 17 health professions and occupations from 1900 to 1960 are shown in the table. Some of the categories are specific occupations, e.g., physicians (M.D.), dentists, etc. Other categories are general, e.g., therapists and healers (n.e.c.).

The data for 1900–40 are for economically active civilians. This refers to civilian gainful workers 10 years old and over. Gainful workers include all persons who usually worked at gainful labor regardless of when they worked. For 1950 and 1960 the data are for the experienced civilian labor force. This includes persons 14 years old and over who were either working or actively seeking work during a particular period (the calendar week prior to the date of enumeration for 1960).

Despite limitations, there is some value in the trends in the number of persons in selected health occupations in this century. The total number of persons in 17 selected occupations increased from some 340,000 in 1900 to over 1,980,000 in 1960. As a proportion of the total labor force, the increase was from 1.2 percent to 2.9 percent in the 60-year period.

Table 1

Persons in selected health occupations, as reported in the decennial population census: 1900–60

Occupation	Economically active civilians					Experienced civilian labor force	
	1900	1910	1920	1930	1940	1950	1960
Total selected occupations	342, 770	463, 296	589, 843	815, 564	927, 140	1, 361, 227	1, 983, 604
Physicians (M.D.)	[1] 131, 477	152, 422	146, 297	156, 603	168, 386	192, 892	229, 590
Physicians (D.O.)			5, 030	6, 117	6, 128	5, 174	3, 951
Dentists	29, 665	39, 997	56, 152	71, 055	70, 982	75, 529	83, 198
Professional nurses [2]	11, 804	50, 500	103, 900	214, 300	284, 200	405, 515	591, 829
Attendants, hospital and other institution	[3] 109, 152	[3] 133, 043	[3] 156, 769	[3] 197, 618	101, 878	211, 675	408, 587
Attendants, physicians' and dentists' offices		6, 188	13, 759	27, 757	35, 381	42, 024	72, 697
Chiropractors	(4)	(5)	(5)	11, 916	10, 997	13, 091	14, 360
Dietitians, nutritionists						22, 902	26, 702
Midwives	(6)	(6)	(6)	(6)	(7)	1, 806	995
Opticians, lens grinders, and polishers	6, 350	9, 034	10, 595	12, 508	11, 721	19, 856	20, 967
Optometrists		1, 350	7, 337	8, 377	10, 450	14, 750	16, 081
Pharmacists	46, 159	54, 276	64, 236	83, 810	82, 583	89, 211	92, 710
Practical nurses	(6)	(6)	(6)	(6)	[8] 115, 075	144, 918	216, 757
Psychologists						4, 919	12, 126
Technicians, medical and dental						78, 385	140, 836
Therapists and healers (n.e.c.)	(4)	[9] 4, 834	[9] 12, 274	13, 640	18, 291	25, 058	37, 312
Veterinarians	8, 163	11, 652	13, 494	11, 863	11, 068	13, 522	14, 906
Total civilian labor force	29, 030, 038	37, 291, 483	42, 205, 745	48, 685, 590	51, 742, 023	59, 229, 531	67, 990, 073
Percent in selected health occupations	1. 2	1. 2	1. 4	1. 7	1. 8	2. 3	2. 9

[1] Includes also chiropractors and therapists and healers (n.e.c.).

[2] The number of professional nurses for 1910–40 has been estimated by subtracting from the reported figures the number of student nurses known from other sources.

[3] Includes also practical nurses and midwives.

[4] Included with physicians.

[5] Included with therapists and healers (n.e.c.).

[6] Included with attendants, hospital and other insititution.

[7] Included with practical nurses.

[8] Includes also midwives.

[9] Includes also chiropractors.

Source: U.S. Bureau of the Census. Occupational Trends in the United States 1900 to 1950. Working Paper No. 5. Washington, U.S. Department of Commerce, 1958.

U.S. Bureau of the Census. United States Census of Population: 1960. Detailed Characteristics. U.S. Summary. Final Report. PC(1)–1D. Washington, U.S. Government Printing Office, 1963.

Table 2

The Bureau of the Census industrial classification has two categories under the health services industry—hospitals and other health services. Persons employed in these two segments increased from 1.1 million in 1940 to 2.6 million in 1960. In relation to the total labor force, the increase was from 2.0 percent to 3.9 percent. Almost two-thirds of the persons in the health services industry in 1960 were in hospitals; the other third were in practitioners offices, laboratories, etc.

Table 2

Persons in the health services industry in relation to total labor force in the United States: 1940–60

Item	1940	1950	1960
Experienced civilian labor force:			
Total	51,934,000	59,229,500	67,990,100
Persons in health services industry:			
Total	1,059,000	1,698,900	2,642,300
Hospitals		1,009,000	1,726,600
Other health services		689,900	915,700
Percent in the health services industry	2.0	2.9	3.9

Source: U.S. Bureau of the Census. Comparative Occupation Statistics for the United States, 1870 to 1940. Washington, U.S. Government Printing Office, 1943.

U.S. Bureau of the Census. United States Census of Population: 1960. Detailed Characteristics. U.S. Summary. Final Report. PC(1)-1D. Washington, U.S. Government Printing Office, 1963.

U.S. Bureau of the Census. Statistical Abstract of the United States: 1966. Washington, U.S. Government Printing Office, 1966.

Table 3 and Figure 2

The data shown here are for employed persons and therefore differ from those in the two preceding tables which are for the experienced civilian labor force.

In 1960, 1.6 million of the 1.9 million persons in the 17 selected health occupations included in table 1 were employed in the health services industry and 0.3 million in other industries. Persons in health occupations employed in "other" industries include for example industrial physicians and nurses in manufacturing, trade, construction, etc. Pharmacists employed in drug stores would be counted in retail trade. Many veterinarians are counted in agriculture.

Of the 2.6 million persons employed in the health services industry in 1960, almost 1 million were in occupations other than the 17 selected occupations mentioned above. These other occupations include such categories as clerical, secretarial, housekeeping, maintenance, and custodial workers in hospitals.

Table 3

Persons employed in the health services industry in relation to persons in selected health occupations: 1960

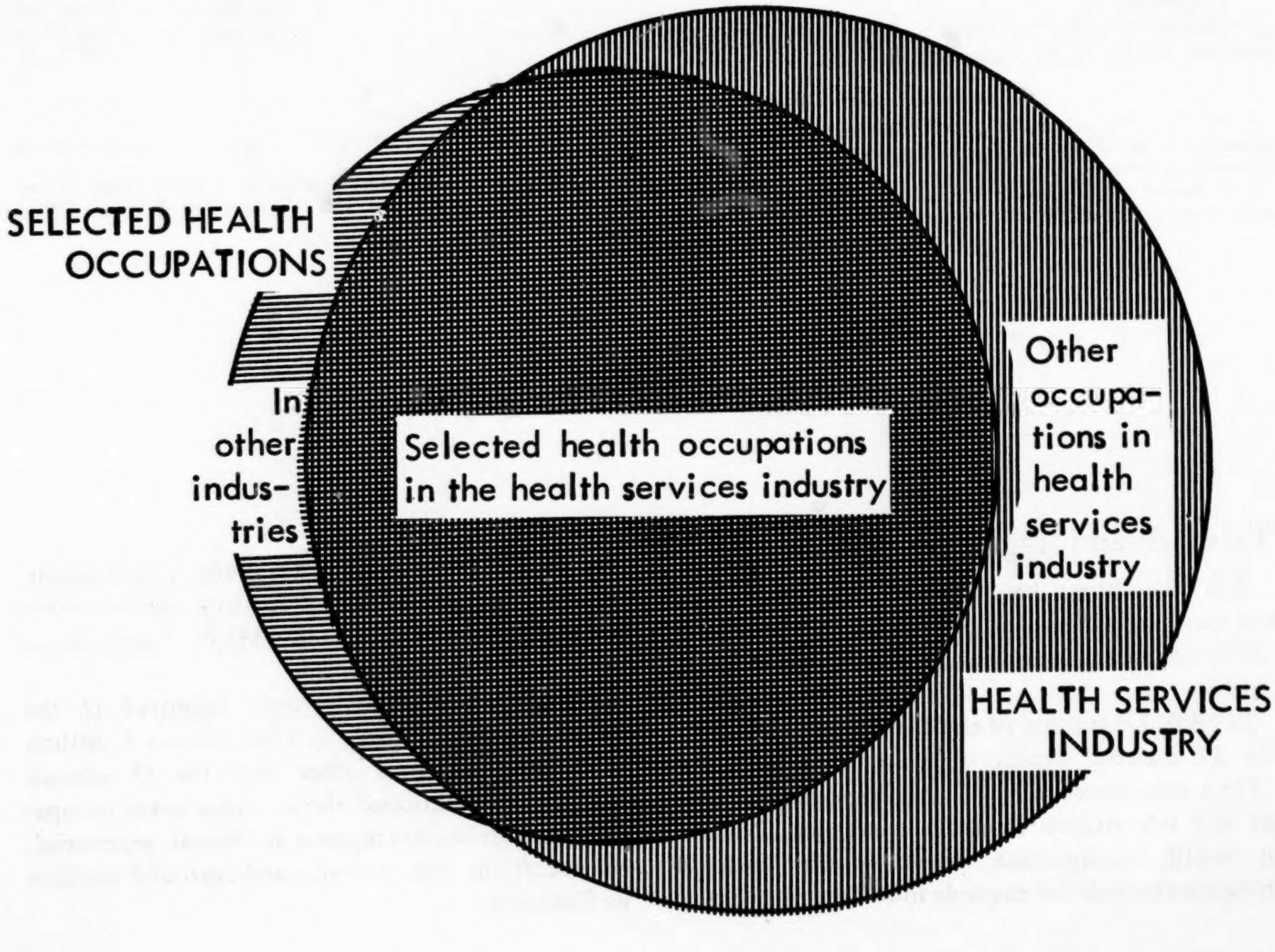
Occupation	All industries	Health services industry	Other industries
All occupations	64, 639, 256	2, 589, 253	62, 050, 003
Selected health occupations [1]	1, 945, 544	1, 627, 726	317, 818
Other occupations	62, 693, 712	961, 527	61, 732, 185

---

[1] Includes occupations shown in table 1.

Source: Prindle, Richard A. and Pennell, Maryland Y. Health Manpower Source Book 17. Industry and Occupation Data from the 1960 Census, By State. Public Health Service Publication Number 263, Section 17. Washington, U.S. Government Printing Office, 1963.

FIGURE 2.—Relation between number of persons in selected health occupations and number in the health services industry: 1960.


SELECTED HEALTH OCCUPATIONS
In other indus-tries
Selected health occupations in the health services industry
Other occupa-tions in health services industry
HEALTH SERVICES INDUSTRY

Medicine and Osteopathy

All States and the District of Columbia license doctors of medicine (M.D.) and doctors of osteopathy (D.O.). To qualify for a license as an M.D., a candidate must meet the following requirements:

1. Graduate from an approved medical school in the United States or Canada or meet special qualifications such as certification by the Educational Council for Foreign Medical Graduates (ECFMG).
2. Pass a State licensing examination (all States and the District of Columbia require a written test, 18 States require in addition an oral test).
3. Serve a 1-year hospital internship (required in 32 States and the District of Columbia).
4. Pass an examination in basic science (required in 23 States and the District of Columbia).

In addition to the above requirements some States specify the number of required years of preprofessional education, some specify a minimum age, and the majority require full citizenship or legal declaration of intention. Many States license physicians who have a license in another State by reciprocity or endorsement.

Medical schools in the United States and Canada are approved by the Liaison Committee on Medical Education representing the American Medical Association and the Association of American Medical Colleges.

Internships are approved by the Council on Medical Education of the American Medical Association assisted in the review of individual programs by the Internship Review Committee. This Committee has representation from the Council on Medical Education, the Association of American Medical Colleges, the American Hospital Association, the Federation of State Medical Boards, and the field of general practice.

Residencies are approved by the Council on Medical Education of the American Medical Association assisted by 19 separate committees for the review of residencies in the various specialties. Each committee is composed of Council representatives, members of the particular specialty board, and in addition, for the appropriate specialty, representatives of the American College of Surgeons, the American College of Physicians, the American Academy of Pediatrics, and the American Academy of General Practice.

A license granting unlimited rights to practice osteopathy is issued by 41 States and the District of Columbia. The other nine States issue limited licenses only. To qualify for a license as a D.O. a candidate must meet the following requirements:

1. Receive a degree of D.O. from an approved college.
2. Pass a State written examination.
3. Serve a 1-year internship (required in 31 States and the District of Columbia).
4. Pass an examination in basic science (required in 24 States and the District of Columbia).

Schools of osteopathic medicine are approved by the American Osteopathic Association.

Internships and residencies for osteopathic physicians are approved by the Bureau of Professional Education of the American Osteopathic Association.

Tables 4, 5, and 6

Data on the number of medical schools, students, and graduates prior to 1900 are fragmentary and of dubious accuracy. The first medical school in the United States was founded in 1765 (University of Pennsylvania). In 1800, three schools graduated students, with the number of schools increasing steadily from 52 in 1850 to a maximum of 162 in 1906. From 1906 to 1929 the number of schools declined sharply, largely because of the inspection and classification system begun in 1904 by the American Medical Association's Council on Medical Education. In the early 1940's a few unapproved schools were still in operation. In 1948 the last of these was approved by the Council on Medical Education.

Data on medical students and graduates are available only since 1880. The numbers increased, along with an increase in the number of schools, to a peak in the first decade of this century (28,142 students and 5,747 graduates in 1904). With the decline in the number of schools after 1906, the numbers of students and graduates also declined to lows in the 1920's.

During the 1930's and 1940's the number of students and graduates increased slowly and by 1950 the number of students had reached some 26,000. Between 1950 and 1960 the number of students increased 16 percent and the number of graduates increased 14 percent. Since 1960, students and graduates have each increased an additional 14 percent.

In 1930-31 there were six schools of osteopathic medicine with some 1,700 students and almost 400 graduates. In 1961-62 one of these schools became an approved school of medicine. In 1967-68 the five schools of osteopathic medicine had some 1,800 students and over 425 graduates.

Table 4

Medical schools, students, and graduates: selected years 1810-1930

Academic year ending	Number of schools [1]	Number of students	Number of graduates
1810	5	....	....
1820	10	....	....
1830	20	....	....
1840	35	....	....
1850	52	....	....
1860	65	....	....
1870	75	....	....
1880	100	11,826	3,241
1890	133	15,404	4,454
1900	160	25,171	5,214
1910	131	21,526	4,440
1920	85	13,798	3,047
1925	80	18,200	3,974
1930	76	21,597	4,565

[1] Includes basic science (2-year) schools. From 1910-30, includes only approved medical schools.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; Division of Public Health Methods. Health Manpower Source Book 9. Physicians, Dentists, and Professional Nurses. Public Health Service Publication Number 263, Section 9. Washington, U.S. Government Printing Office, 1959.

Table 5

Medical schools, students, and graduates: selected years 1930–31 through 1967–68

Academic year	Number of schools [1]	Number of students: Total [2]	Number of students: Full time	Total first-year students [2]	Number of graduates
1930–31	76	21, 982	...	6, 456	4, 735
1935–36	77	22, 564	...	6, 605	5, 183
1940–41	77	21, 379	...	5, 837	5, 275
1945–46	77	23, 216	...	6, 060	5, 826
1950–51 [3]	79	26, 186	...	7, 177	6, 135
1955–56 [3]	82	28, 639	28, 581	7, 686	6, 845
1960–61	86	30, 288	30, 093	8, 298	6, 994
1961–62	87	31, 078	30, 836	8, 483	7, 168
1962–63	87	31, 491	31, 241	8, 642	7, 264
1963–64	87	32, 001	31, 667	8, 772	7, 336
1964–65	88	32, 428	32, 152	8, 856	7, 409
1965–66	88	32, 835	32, 516	8, 759	7, 574
1966–67 [4]	90	33, 449	33, 133	8, 990	7, 743
1967–68	[5] 95	34, 538	34, 268	9, 479	7, 973

---

[1] Since 1961–62 includes new schools beginning in the year in which students were enrolled in any medical school year. Prior to that time, schools in development were not included until approved, usually when all 4 classes were enrolled.

[2] Includes full-time, part-time, and special students.

[3] The number of schools differs from that shown in table 7 because of the procedure explained in footnote 1.

[4] Figures differ from those in the source document because latter does not include Michigan State University College of Human Medicine.

[5] Figure differs from that in source document because latter does not include University of Texas at San Antonio whose first students were at other University of Texas campuses in 1967–68.

Source: Education Number of Journal of the American Medical Association, Nov. 25, 1968 and previous annual issues.

Table 6

Schools of osteopathic medicine, students, and graduates: selected years 1930–31 through 1967–68

Academic year	Number of schools	Number of students	First-year students	Number of graduates
1930–31	6	1, 705	...	393
1935–36	6	2, 016	490	431
1940–41	6	1, 563	...	499
1945–46	6	556	...	213
1950–51	6	1, 876	507	427
1955–56	6	1, 883	520	464
1960–61	6	1, 944	496	506
1961–62	5	1, 555	439	362
1962–63	5	1, 581	433	362
1963–64	5	1, 594	441	354
1964–65	5	1, 661	472	395
1965–66	5	1, 681	464	360
1966–67	5	1, 763	480	405
1967–68	5	1, 823	509	427

Source: Educational Supplement of American Osteopathic Association, Jan. 1969 and previous annual issues.

Unpublished data from the Office of Education, American Osteopathic Association.

Table 7

There are in 1969 a total of 104 schools of medicine and osteopathic medicine in operation. Of these, 99 are medical schools and 5 are schools of osteopathic medicine. In the late 1920's there were 75 medical schools. The increase has been greatly accelerated in recent years.

In 1930-39, two new medical schools began operations. In the 1940's, two new schools opened, an existing school was approved, and Rush Medical College closed as an undergraduate medical school. In the 1950's, six new schools commenced operations. Since 1960, 13 medical schools have enrolled students and one school of osteopathic medicine has become an approved medical school. In 1969-70, two medical schools are expected to enroll their first students; one additional school in 1970-71 and two in 1971-72 are expected. This would make a total of 104 medical schools in operation in 1972.

The number of schools of osteopathic medicine has remained at five since 1961, but a new school, Michigan College of Osteopathic Medicine, is expected to enroll students in the 1969-70 academic year.

Table 7

New and developing medical schools and number of schools in operation: 1930-31 through 1971-72

Academic year first medical school class enrolled	Name of medical school	Total number of medical schools with students enrolled [1]
1930-31	Duke University School of Medicine	76
1931-32	Louisiana State University School of Medicine	77
1942-43	Rush Medical College closed	76
1943-44	University of Texas Southwestern Medical School	77
1946-47	University of Washington School of Medicine	78
1948-49	Chicago Medical School approved	79
1950-51	University of Puerto Rico School of Medicine	80
1951-52	University of California School of Medicine, Los Angeles	81
1952-53	University of Miami School of Medicine	82
1955-56	Albert Einstein College of Medicine of Yeshiva University	83
1956-57	New Jersey College of Medicine and Dentistry (Seton Hall); University of Florida College of Medicine.	85
1960-61	University of Kentucky College of Medicine	86
1961-62	University of California College of Medicine, Irvine approved (previously College of Osteopathic Physicians and Surgeons).	87
1964-65	University of New Mexico School of Medicine	88
1966-67	Rutgers—The State University, Rutgers Medical School; Michigan State University College of Human Medicine.	90
1967-68	University of Arizona College of Medicine; Brown University Program in Medical Science; University of Hawaii School of Medicine; The Pennsylvania State University College of Medicine, Milton S. Hershey Medical Center; University of Texas Medical School at San Antonio.	95
1968-69	University of California School of Medicine, Davis; University of California San Diego School of Medicine; University of Connecticut School of Medicine; Mount Sinai School of Medicine of the City University of New York.	99
1969-70	Louisiana State University Shreveport School of Medicine; Medical College of Ohio at Toledo.	101
1970-71	University of Massachusetts School of Medicine	102
1971-72	State University of New York School of Medicine, Stony Brook; University of South Florida College of Medicine.	104

[1] Includes schools of basic medical science; one of these, Dartmouth Medical School, is expanding to a 4-year medical school.

Source: Education Number of Journal of the American Medical Association, Nov. 25, 1968, and previous annual issues.

Table 8

The number of admissions to schools of medicine and osteopathic medicine has been rising, and there is every indication that the increase will continue and accelerate. A moderate estimate is that in the 1974-75 academic year there will be 47,500 medical students and 10,330 graduates. This would be an increase of 31 percent over 1967-68 in the number of students and an increase of 23 percent in the number of graduates. With increased financial assistance to the schools the increase in enrollment could be expected to be even greater.

Table 8

Estimated number of medical and osteopathic students and graduates: 1968–69 through 1974–75

Academic year	Number of students			First-year students			Graduates[1]		
	Total	Medical	Osteopathic	Total	Medical	Osteopathic	Total	Medical	Osteopathic
1968–69	36,880	35,010	1,870	10,230	9,710	520	8,240	7,830	410
1969–70	38,130	36,190	1,940	10,550	10,010	540	8,470	8,040	430
1970–71	39,550	37,530	2,020	10,980	10,420	560	8,930	8,480	450
1971–72	41,040	38,910	2,130	11,540	10,920	620	9,150	8,680	470
1972–73	42,980	40,680	2,300	12,250	11,560	690	9,430	8,950	480
1973–74	45,290	42,840	2,450	12,970	12,260	710	9,820	9,320	500
1974–75	47,500	44,900	2,600	13,330	12,600	730	10,330	9,770	560

[1] About 10 percent attrition was applied to first-year students to obtain an estimate of graduates.

Source: Bureau of Health Professions Education and Manpower Training, Division of Physician Manpower.

Tables 9 and 10 and Figure 3

In the 1968–69 academic year there are 94 4-year medical schools, five basic science schools and five schools of osteopathic medicine in operation. Six additional schools are in varying stages of development. When these six schools are in operation there will still be seven States without a medical or basic science school: Alaska, Delaware, Idaho, Maine, Montana, Nevada, and Wyoming.

Table 9

Medical schools, students, and graduates, by State: 1967–68

State and school	Number of students		Number of graduates
	Total	First year	
Total	34, 538	9, 479	7, 973
ALABAMA			
Medical College of Alabama	325	89	71
ARIZONA			
University of Arizona College of Medicine [1]	32	32	0
ARKANSAS			
University of Arkansas School of Medicine	388	113	84
CALIFORNIA			
Loma Linda University School of Medicine	346	102	83
Stanford University School of Medicine	332	76	61
University of California College of Medicine, Irvine	290	64	89
University of California School of Medicine, Los Angeles	336	111	73
University of California School of Medicine, San Francisco	522	131	128
University of Southern California School of Medicine	280	73	67
COLORADO			
University of Colorado School of Medicine	339	88	88
CONNECTICUT			
Yale University School of Medicine	344	92	81
DISTRICT OF COLUMBIA			
Georgetown University School of Medicine	453	121	109
George Washington University School of Medicine	412	112	105
Howard University College of Medicine	398	111	93
FLORIDA			
University of Florida College of Medicine	237	66	55
University of Miami School of Medicine	329	88	77
GEORGIA			
Emory University School of Medicine	290	79	66
Medical College of Georgia	388	105	93
HAWAII			
University of Hawaii School of Medicine [1]	28	28	0
ILLINOIS			
Chicago Medical School	288	74	73
Loyola University, Stritch School of Medicine	363	110	82
Northwestern University Medical School	552	136	135
University of Chicago Pritzker School of Medicine	285	79	68
University of Illinois College of Medicine	782	205	183
INDIANA			
Indiana University School of Medicine	842	221	209
IOWA			
University of Iowa College of Medicine	492	127	125
KANSAS			
University of Kansas School of Medicine	466	130	100
KENTUCKY			
University of Kentucky College of Medicine	291	83	58
University of Louisville School of Medicine	370	99	92
LOUISIANA			
Louisiana State University School of Medicine	513	145	115
Tulane University School of Medicine	508	139	122

Table 9—Continued

Medical schools, students, and graduates, by State: 1967–68

State and school	Number of students		Number of graduates
	Total	First year	
MARYLAND			
Johns Hopkins University School of Medicine	366	95	89
University of Maryland School of Medicine	510	140	118
MASSACHUSETTS			
Boston University School of Medicine	293	75	77
Harvard Medical School	562	126	139
Tufts University School of Medicine	446	120	110
MICHIGAN			
Michigan State University College of Human Medicine [1]	53	27	0
University of Michigan Medical School	797	210	186
Wayne State University School of Medicine	537	139	125
MINNESOTA			
University of Minnesota Medical School	663	168	152
MISSISSIPPI			
University of Mississippi School of Medicine	306	86	65
MISSOURI			
St. Louis University School of Medicine	454	130	109
University of Missouri School of Medicine	334	93	74
Washington University School of Medicine	352	97	83
NEBRASKA			
Creighton University School of Medicine	291	83	61
University of Nebraska College of Medicine	350	93	94
NEW HAMPSHIRE			
Dartmouth Medical School [2]	95	48	0
NEW JERSEY			
New Jersey College of Medicine and Dentistry	304	83	71
Rutgers-The State University-Rutgers Medical School [2]	32	16	0
NEW MEXICO			
University of New Mexico School of Medicine	85	26	19
NEW YORK			
Columbia University College of Physicians and Surgeons	479	133	107
Cornell University Medical College	344	90	86
New York Medical College	499	133	119
New York University School of Medicine	506	132	121
State University of New York at Buffalo School of Medicine	397	109	92
State University of New York College of Medicine, Brooklyn	771	201	196
State University of New York College of Medicine, Syracuse	394	105	94
Albany Medical College of Union University	274	71	63
University of Rochester School of Medicine and Dentistry	290	79	64
Albert Einstein College of Medicine of Yeshiva University	387	105	94
NORTH CAROLINA			
Duke University School of Medicine	329	87	83
University of North Carolina School of Medicine	288	75	68
Bowman Gray School of Medicine of Wake Forest College	224	63	52
NORTH DAKOTA			
University of North Dakota School of Medicine [2]	92	49	0
OHIO			
Case Western Reserve University School of Medicine	353	91	79
Ohio State University College of Medicine	593	157	136
University of Cincinnati College of Medicine	400	106	96

Table 9—Continued

Medical schools, students, and graduates, by State: 1967–68

State and school	Number of students		Number of graduates
	Total	First year	
OKLAHOMA			
University of Oklahoma School of Medicine	404	110	92
OREGON			
University of Oregon Medical School	332	90	68
PENNSYLVANIA			
Hahnemann Medical College of Philadelphia	425	115	102
Jefferson Medical College of Philadelphia	685	186	157
The Pennsylvania State University College of Medicine Milton S. Hershey Medical Center [1]	40	40	0
Temple University School of Medicine	552	139	143
University of Pennsylvania School of Medicine	516	133	129
University of Pittsburgh School of Medicine	390	108	93
Woman's Medical College of Pennsylvania	225	69	37
PUERTO RICO			
University of Puerto Rico School of Medicine	234	71	43
RHODE ISLAND			
Brown University Program in Medical Science [1]	13	13	0
SOUTH CAROLINA			
Medical College of South Carolina	302	82	66
SOUTH DAKOTA			
University of South Dakota School of Medicine [2]	93	49	0
TENNESSEE			
Meharry Medical College School of Medicine	251	85	49
University of Tennessee College of Medicine	695	204	141
Vanderbilt University School of Medicine	217	59	50
TEXAS			
Baylor University College of Medicine	350	85	85
University of Texas Medical Branch, Galveston [3]	589	164	139
University of Texas Southwestern Medical School, Dallas [3]	407	108	96
UTAH			
University of Utah College of Medicine	248	66	54
VERMONT			
University of Vermont College of Medicine	202	55	44
VIRGINIA			
Medical College of Virginia	416	129	80
University of Virginia School of Medicine	302	81	69
WASHINGTON			
University of Washington School of Medicine	327	82	83
WEST VIRGINIA			
West Virginia University School of Medicine	247	69	59
WISCONSIN			
Marquette University School of Medicine	399	111	90
University of Wisconsin Medical School	406	106	97

---

[1] New medical school.

[2] 2-year basic science school.

[3] First- and second-year students from the new school, University of Texas Medical School at San Antonio, were enrolled at Galveston and Dallas in 1967–68 before being transferred to San Antonio in 1968–69. Galveston's enrollment includes 7 of these first-year students and 10 second-year students. Dallas' enrollment includes only 5 second-year students.

Source: Education Number of the Journal of the American Medical Association, Nov. 25, 1968.

Table 10

Schools of osteopathic medicine, students, and graduates, by State: 1967–68

State and school	Number of students		Number of graduates
	Total	First year	
Total	1, 823	509	427
ILLINOIS			
Chicago College of Osteopathy	282	79	59
IOWA			
College of Osteopathic Medicine and Surgery	338	97	79
MISSOURI			
Kansas City College of Osteopathy and Surgery	428	114	106
Kirksville College of Osteopathy and Surgery	396	106	93
PENNSYLVANIA			
Philadelphia College of Osteopathy	379	113	90

Source: Educational Supplement of Journal of the American Osteopathic Association, Jan. 1968 and 1969.

FIGURE 3.—Medical schools and schools of osteopathic medicine in operation and in development in the United States: 1968–69.

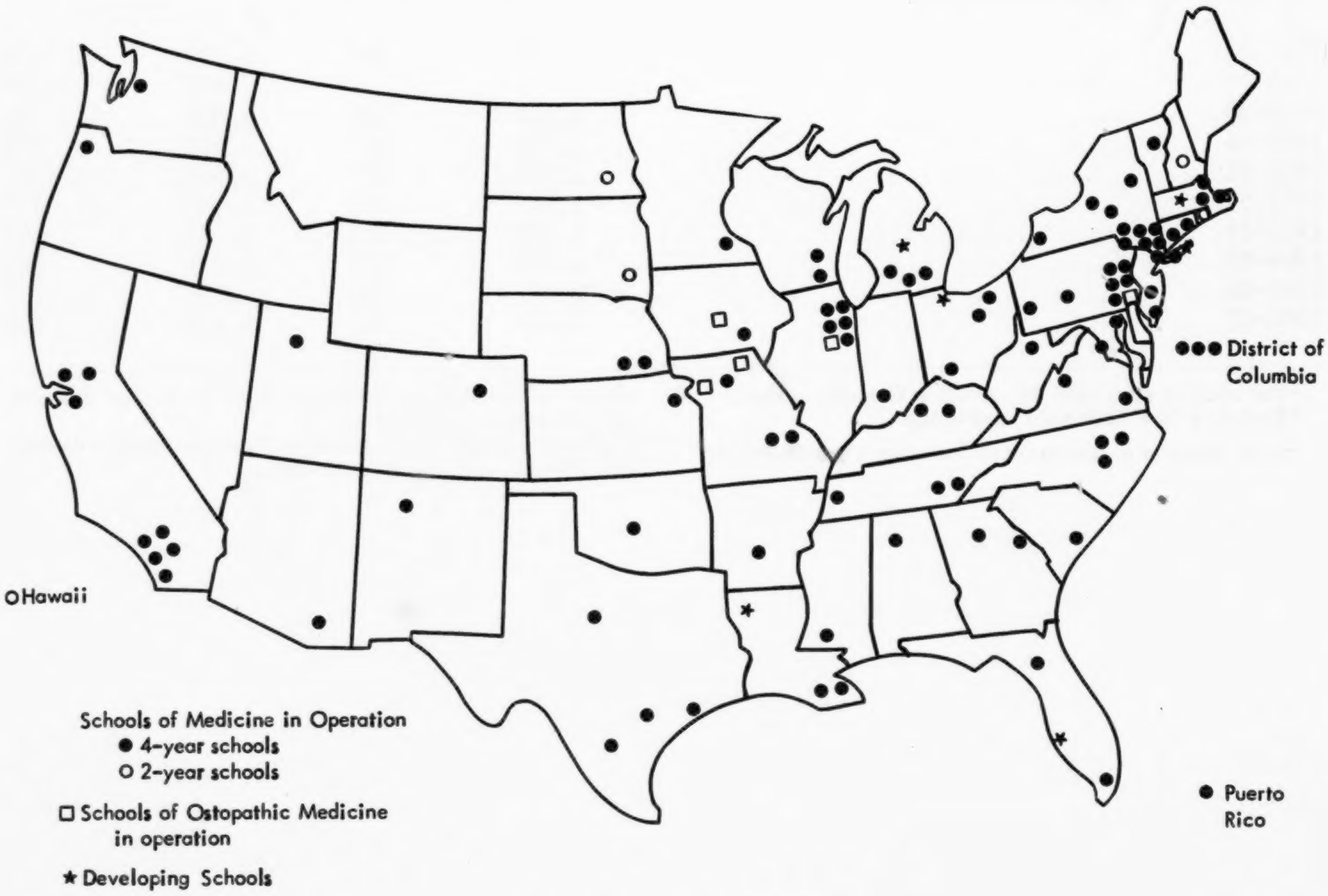

●●● District of Columbia
○ Hawaii
● Puerto Rico
Schools of Medicine in Operation
● 4–year schools
○ 2–year schools
□ Schools of Ostopathic Medicine in operation
★ Developing Schools

Table 11

In spite of the increasing number of places in U.S. medical schools, a considerable number of U.S. citizens study medicine outside the United States. In 1966–67 there were over 2,300 such students. Information on the annual number of U.S. citizens graduating from foreign medical schools is not available. However about 200 such graduates have been newly licensed annually in the United States in recent years.

Table 11

U.S. students in foreign medical schools: selected years 1954–55 through 1966–67

Academic year	U.S. students in foreign medical schools			Initial U.S. licenses issued to American graduates of foreign medical schools [1]
	Total	Canadian schools	Other foreign schools	
1954–55	1,730	332	1,398	[2] 89
1955–56			1,863	103
1959–60	2,896	281	2,615	386
1960–61	2,832	312	2,520	468
1961–62	2,097	284	1,813	201
1962–63	1,929	264	1,665	213
1963–64	1,872	229	1,643	177
1964–65	2,215	202	2,013	243
1965–66	2,377	180	2,197	177
1966–67	2,325	167	2,158	187

---

[1] For calendar years 1955–67, excluding Canadian schools.

[2] Excluding New York and Pennsylvania.

Source: Institute of International Education: Open Doors 1968. Report on International Exchange, New York, The Institute, 1968. Also prior annual issues.

Education Number of Journal of the American Medical Association, Nov. 16, 1967, and Nov. 25, 1968.

Tables 12–15

The number of applicants to medical schools reached a peak of 22,300 in 1950–51 and then declined to 14,400 by 1961–62. Another peak was reached in 1964–65. Since that time there has been a slight decline in applicants.

The number of medical school applicants in relation to accepted applicants has fluctuated between a low of 1.7 in 1960–61 and 1961–62 to a high of 3.1 in 1950–51. The last few years have seen about two applicants for every accepted applicant.

The number of applicants in relation to the pool of young people from which most applicants are drawn has fluctuated irregularly. There were 6.3 applicants per 1,000 20-year olds in 1960–61, 6.0 each of the next 3 years, 6.9 in 1964–65 and only 5.0 in 1967–68. In relation to bachelor's degrees granted, the number of applicants is also declining—from 4.3 per 100 bachelor's degrees granted in 1963–64 to 3.3 in 1967–68.

In schools of osteopathic medicine the number of applicants per first-year student has varied from a low of 2.8 in 1955–56 and 1962–63 to a high of 5.2 in 1950–51. In relation to both 20-year olds and bachelor's degrees, the applicants to schools of osteopathic medicine have declined in recent years.

There is some duplication between applicants to medical school and applicants to schools of osteopathic medicine. The amount of such duplication is not known.

Table 12

Medical school applicants: selected years 1947–48 through 1967–68

Academic year	Number of applicants	Applications per applicant	Number of accepted applicants	Applicants per accepted applicant
1947–48	18, 829	3.0	6, 512	2.9
1950–51	22, 279	3.7	7, 254	3.1
1955–56	14, 937	3.6	7, 969	1.9
1960–61	14, 397	3.8	8, 560	1.7
1961–62	14, 381	3.7	8, 682	1.7
1962–63	15, 847	3.7	8, 959	1.8
1963–64	17, 668	4.0	9, 063	1.9
1964–65	19, 168	4.4	9, 043	2.1
1965–66	18, 703	4.7	9, 012	2.1
1966–67	18, 250	4.8	9, 123	2.0
1967–68	18, 724	5.0	9, 702	1.9

Source: Education Number of Journal of the American Medical Association, Nov. 25, 1968.

Table 13

Applicants to schools of osteopathic medicine: selected years 1947–48 through 1967–68

Academic year	Number of applicants	First-year students	Applicants per first-year student
1947–48	1,840	505	3.6
1950–51	2,618	507	5.2
1955–56	1,437	520	2.8
1960–61	1,594	496	3.2
1961–62	1,683	530	3.2
1962–63	1,213	433	2.8
1963–64	1,460	441	3.3
1964–65	2,218	472	4.7
1965–66	2,284	464	4.9
1966–67	2,104	480	4.4
1967–68	2,142	509	4.2

Source: Educational Supplement of Journal of the American Osteopathic Association, Jan. 1968 and previous annual issues. Unpublished data from the Office of Education, American Osteopathic Association.

Table 14

Medical school applicants in relation to young people and to college graduates: selected years 1947–48 through 1967–68

Academic year	Number of applicants	Population age 20	Bachelor's degrees granted [1]	Applicants per	
				1,000 persons age 20	100 bachelor's degrees granted
1947–48	18,829	2,285,000	199,025	8.2	9.5
1950–51	22,279	2,258,000	422,671	9.9	5.3
1955–56	14,937	2,136,000	275,407	7.0	5.4
1960–61	14,397	2,281,000	382,821	6.3	3.8
1961–62	14,381	2,408,000	365,337	6.0	3.9
1962–63	15,847	2,623,000	382,822	6.0	4.1
1963–64	17,668	2,955,000	410,421	6.0	4.3
1964–65	19,168	2,790,000	460,467	6.9	4.2
1965–66	18,703	2,804,000	492,984	6.7	3.8
1966–67	18,250	2,790,000	524,117	6.5	3.5
1967–68	18,724	3,761,000	562,369	5.0	3.3

[1] Data are for the academic year preceding year of application. Data before 1960–61 differ slightly from data for later years because of changes in definitions and techniques used.

Source: Education Number of Journal of the American Medical Association, Nov. 25, 1968.

National Science Foundation. Comparisons of Earned Degrees Awarded 1901–1962—With Projections to 2000. Washington, The Foundation, 1964.

U.S. Department of Health, Education, and Welfare; Office of Education. Earned Degrees, 1967–68. Washington, U.S. Government Printing Office, 1969 and previous annual publications.

U.S. Bureau of the Census. Population Estimates. Current Population Reports, P–25, Nos. 311, 314, 381.

Table 15

Applicants to schools of osteopathic medicine in relation to young people and to college graduates: selected years 1947–48 through 1967–68

Academic year	Number of applicants	Population age 20	Bachelor's degrees granted [1]	Applicants per 1,000 persons age 20	Applicants per 100 bachelor's degrees granted
1947–48	1, 840	2, 285, 000	199, 025	0. 8	0. 9
1950–51	2, 618	2, 258, 000	422, 671	1. 2	0. 6
1955–56	1, 437	2, 136, 000	275, 407	0. 7	0. 5
1960–61	1, 594	2, 281, 000	382, 821	0. 7	0. 4
1961–62	1, 683	2, 408, 000	365, 337	0. 7	0. 5
1962–63	1, 213	2, 623, 000	382, 822	0. 5	0. 3
1963–64	1, 460	2, 955, 000	410, 421	0. 5	0. 4
1964–65	2, 218	2, 790, 000	460, 467	0. 8	0. 5
1965–66	2, 284	2, 804, 000	492, 984	0. 8	0. 5
1966–67	2, 104	2, 790, 000	524, 117	0. 8	0. 4
1967–68	2, 142	3, 761, 000	562, 369	0. 6	0. 4

[1] Data are for the academic year preceding the year of application. Data before 1960–61 differ slightly from data for later years because of changes in definitions and techniques used.

Source: Educational Supplement of Journal of the American Osteopathic Association, Jan. 1968, and previous annual issues.

Unpublished data from the Office of Education, American Osteopathic Association.

National Science Foundation. Comparisons of Earned Degrees Awarded 1901–1962—With Projections to 2000. Washington, The Foundation, 1964.

U.S. Department of Health, Education, and Welfare; Office of Education. Earned Degrees, 1967–68. Washington, U.S. Government Printing Office, 1969 and previous annual publications.

U.S. Bureau of the Census. Population Estimates. Current Population Reports, P–25, Nos. 311, 314, 381.

Expenditures of Medical Schools and Schools of Osteopathic Medicine

The Surgeon General's Committee on Medical School Grants and Finances made a study of medical school expenditures for 1947–48. The concept of basic operating expenditures was first presented in the report of this study.

Basic operating expenses include all expenses for the teaching program of the school but exclude expenditures for sponsored research and for the operation of a teaching hospital. Basic operating expenses differ from expenditures for regular operating programs as shown in the annual reports prepared by the Association of American Medical Colleges in several respects:

Item	Basic operating expenses	Expenditures for regular programs
Contracts, gifts, and grants for teaching and training	Included	Excluded
Miscellaneous sponsored programs	Included	Excluded
Overhead on research contracts and grants	Excluded	Included

More details of the items included in both basic operating expenses and in expenditures for regular programs can be obtained from the annual reports which appear in the Education Number of the *Journal of the American Medical Association.*

The financial data for schools of osteopathic medicine, available since 1960, are not entirely comparable to those for medical schools. The principal difference is the inclusion in the figures for osteopathic schools of the costs of operating a teaching hospital for the four schools with such hospitals. The data for medical schools exclude such expenditures. Another problem is that it is not possible to show figures for basic operations and sponsored research separately.

Table 16 and Figure 4

The 79 medical schools in operation in 1947–48 spent a total of $70.6 million, including $53.5 million for basic operations and $17.1 million for sponsored research. By 1966–67, there were 88 medical schools and total expenditures had risen to $1,010.3 million. Of this amount, $545.7 million was spent for basic operations and $464.6 million for sponsored research.

Table 16

Medical school expenditures for basic operations and sponsored research: selected years 1947–48 through 1966–67

[In thousands of dollars]

Academic year	Number of medical schools	Total expenditures	Basic operations [1]	Sponsored research [2]
1947–48	79	$70, 583	$53, 451	$17, 132
1956–57	85	239, 609	160, 021	79, 588
1958–59	85	319, 029	194, 505	124, 524
1959–60	86	370, 880	223, 538	147, 342
1960–61	87	436, 054	254, 273	181, 781
1961–62	87	514, 893	288, 419	226, 474
1962–63	87	603, 184	312, 257	290, 927
1963–64	87	695, 686	349, 757	345, 929
1964–65	87	778, 700	398, 754	379, 946
1965–66	87	882, 184	463, 320	418, 864
1966–67	88	1, 010, 327	545, 711	464, 616

---

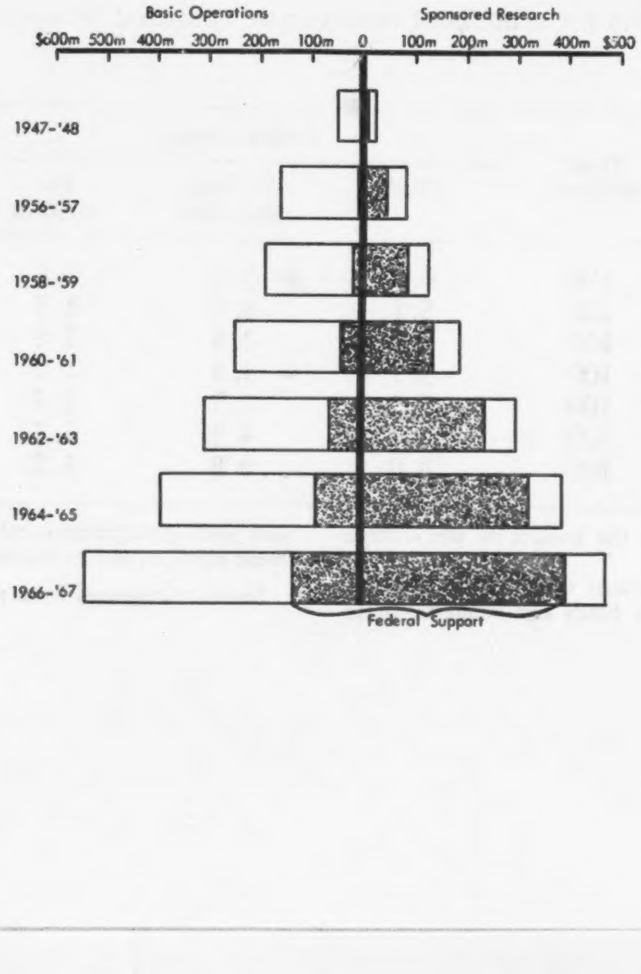
[1] Obtained by subtracting the expenditures for sponsored research from total expenditures.

[2] Includes contracts, gifts, and grants for research; endowment income restricted for research and other funds restricted for research. Includes also the estimated amount of overhead on research grants and contracts obtained by prorating overhead on all grants and contracts between research and training.

Source: Surgeon General's Committee on Medical School Grants and Finances. Financial Status and Needs of Medical Schools. Part II of a Report. Public Health Service Publication No. 54. Washington, U.S. Government Printing Office, 1951.

Computed from data in Education Number of the Journal of the American Medical Association, Nov. 25, 1968, and previous annual issues.

Figure 4.—Medical school expenditures and Federal support: selected years 1947–48 through 1966–67.



Tables 17 and 18

In 1966–67 the five schools of osteopathic medicine spent a total of $20.0 million, including $1.6 million in Federal aid. This was more than double the budgets of the five schools in 1960–61. Federal support increased almost 275 percent in the same period.

Of the 8 percent of the total budgets which came from Federal sources in 1966–67, almost 7 percent was for basic operations. The proportion coming from tuition shows an irregular trend but was lower in 1966–67 than in 1960–61.

Table 17

Budgets for schools of osteopathic medicine by source of funds: 1960–61 through 1966–67

Academic year	Number of schools of osteopathic medicine	Total budget [1]	Federal support			Tuition income	All other [2]
			Total	For basic operations	For research		
1960–61.......	5	$9, 810, 564	$426, 630	$340, 303	$86, 327	$1, 488, 256	$7, 895, 678
1961–62.......	5	10, 565, 732	539, 392	375, 408	163, 984	1, 558, 922	8, 467, 418
1962–63.......	5	11, 676, 017	648, 619	324, 238	324, 381	1, 717, 256	9, 310, 142
1963–64.......	5	12, 654, 659	721, 757	484, 523	237, 234	1, 948, 661	9, 984, 241
1964–65.......	5	14, 127, 048	772, 645	520, 768	251, 877	2, 116, 718	11, 237, 685
1965–66.......	5	16, 041, 839	960, 102	693, 016	267, 086	2, 273, 563	12, 808, 174
1966–67.......	5	19, 971, 262	1, 592, 337	1, 350, 349	241, 988	2, 726, 626	15, 652, 299

[1] For 4 of the 5 schools includes the budget of the college hospital.

[2] Includes income from the American Osteopathic Progress Fund, philanthropic sources, alumni funds and bequests, State and local governments, reimbursements for faculty and department services, and reimbursements for patient care. Breakdown between basic operations and sponsored research not available.

Source: American Osteopathic Association.

Table 18

Percent distribution of budgets for schools of osteopathic medicine by source of funds: 1960–61 through 1966–67

Academic year	Total budget [1]	Federal support			Tuition income	All other [2]
		Total	For basic operations	For research		
1960–61.................	100	4.3	3.4	0.9	15.2	80.5
1961–62.................	100	5.1	3.6	1.5	14.8	80.1
1962–63.................	100	5.6	2.8	2.8	14.7	79.7
1963–64.................	100	5.7	3.8	1.9	15.4	78.9
1964–65.................	100	5.5	3.7	1.8	15.0	79.5
1965–66.................	100	6.0	4.3	1.7	14.2	79.8
1966–67.................	100	8.0	6.8	1.2	13.6	78.4

[1] For 4 of the 5 schools includes the budget of the college hospital.

[2] Includes income from the American Osteopathic Progress Fund, philanthropic sources, alumni funds and bequests, State and local governments, reimbursements for faculty and department services, and reimbursements for patient care.

Source: Computed from table 17.

Tables 19 and 20 and Figure 5

Total expenditures of medical schools for basic operations increased from $160 million in 1956–57 to $546 million in 1966–67, an increase of 240 percent. Federal support for medical school teaching and training programs increased 1100 percent in that period. Income from contracts, gifts, grants, and endowment increased 87 percent and income from tuition and fees increased 110 percent between 1956–57 and 1966–67.

In 1956–57 Federal support accounted for 7 percent of the expenditures for basic operations in medical schools. By 1966–67 Federal support had increased to 26 percent.

Tuition and fees dropped from 13 percent of basic operating expenses in 1956–57 to 8 percent 10 years later. The proportion of support from contracts, gifts, grants, endowment income and from State and local governments also dropped during this period.

Table 19

Medical school expenditures for basic operations by source of funds: selected years 1956–57 through 1966–67

[In thousands of dollars]

Academic year	Number of medical schools	Total expenditures	Federal support for teaching and training [1]	Contracts, gifts, grants, and endowment [2]	Tuition and fees	State and local government support [3]	Reimbursement for patient care [4]	All other [5]
1956–57	85	$160, 021	$11, 765	$29, 122	$20, 943	$56, 969	$17, 084	$24, 138
1958–59	85	194, 505	22, 840	33, 651	24, 368	57, 944	24, 363	31, 339
1959–60	86	223, 538	36, 070	34, 797	25, 831	60, 890	29, 456	36, 494
1960–61	87	254, 273	47, 385	34, 017	28, 193	68, 602	34, 790	41, 286
1961–62	87	288, 419	63, 419	37, 073	30, 221	73, 671	37, 376	46, 659
1962–63	87	312, 257	77, 905	38, 944	32, 281	78, 386	36, 697	48, 044
1963–64	87	349, 757	92, 173	39, 366	35, 427	83, 633	41, 117	58, 041
1964–65	87	398, 754	109, 223	44, 165	38, 621	107, 217	47, 796	51, 732
1965–66	87	463, 320	126, 399	51, 173	41, 019	119, 585	56, 251	68, 893
1966–67	88	545, 711	142, 520	54, 294	43, 944	142, 083	77, 037	85, 833

---

[1] Includes the estimated amount of overhead on Federal grants and contracts for teaching and training.

[2] Includes non-Federal contracts, gifts, and grants for teaching and training (including the estimated amount of overhead); unrestricted gifts and grants; and endowment income.

[3] Includes State, city, and county grants-in-aid or subsidies paid to medical college (including payments through compacts such as WICHE and SREB); and State appropriations.

[4] Includes medical college expenses paid by teaching hospitals and clinics and by medical service funds.

[5] Includes income from college services, other income for regular operations, miscellaneous medical college reserves, miscellaneous university income and reserves, and miscellaneous sponsored programs (exclusive of research, teaching, training, and student aid). Figures in this column were obtained by subtracting the sum of the other sources shown from total expenditures.

Source: Computed from data in Education Number of the Journal of the American Medical Association, Nov. 25 1968 and previous annual issues.

Table 20

Percent distribution of medical school expenditures for basic operations by source of funds: selected years 1956–57 through 1966–67

Academic year	Total expenditures	Federal support for teaching and training	Contracts, gifts, grants, and endowment	Tuition and fees	State and local government support	Reimbursement for patient care	All other
1956–57	100	7.3	18.2	13.1	35.6	10.7	15.1
1958–59	100	11.8	17.3	12.5	29.8	12.5	16.1
1959–60	100	16.1	15.6	11.6	27.2	13.2	16.3
1960–61	100	18.6	13.4	11.1	27.0	13.7	16.2
1961–62	100	22.0	12.8	10.5	25.5	13.0	16.2
1962–63	100	24.9	12.5	10.3	25.1	11.8	15.4
1963–64	100	26.3	11.3	10.1	23.9	11.8	16.6
1964–65	100	27.4	11.1	9.7	26.9	12.0	12.9
1965–66	100	27.3	11.0	8.9	25.8	12.1	14.9
1966–67	100	26.1	10.0	8.1	26.0	14.1	15.7

Source: Computed from table 19.

Figure 5.—Sources of medical school income for basic operations: selected years 1947–48 through 1966–67.

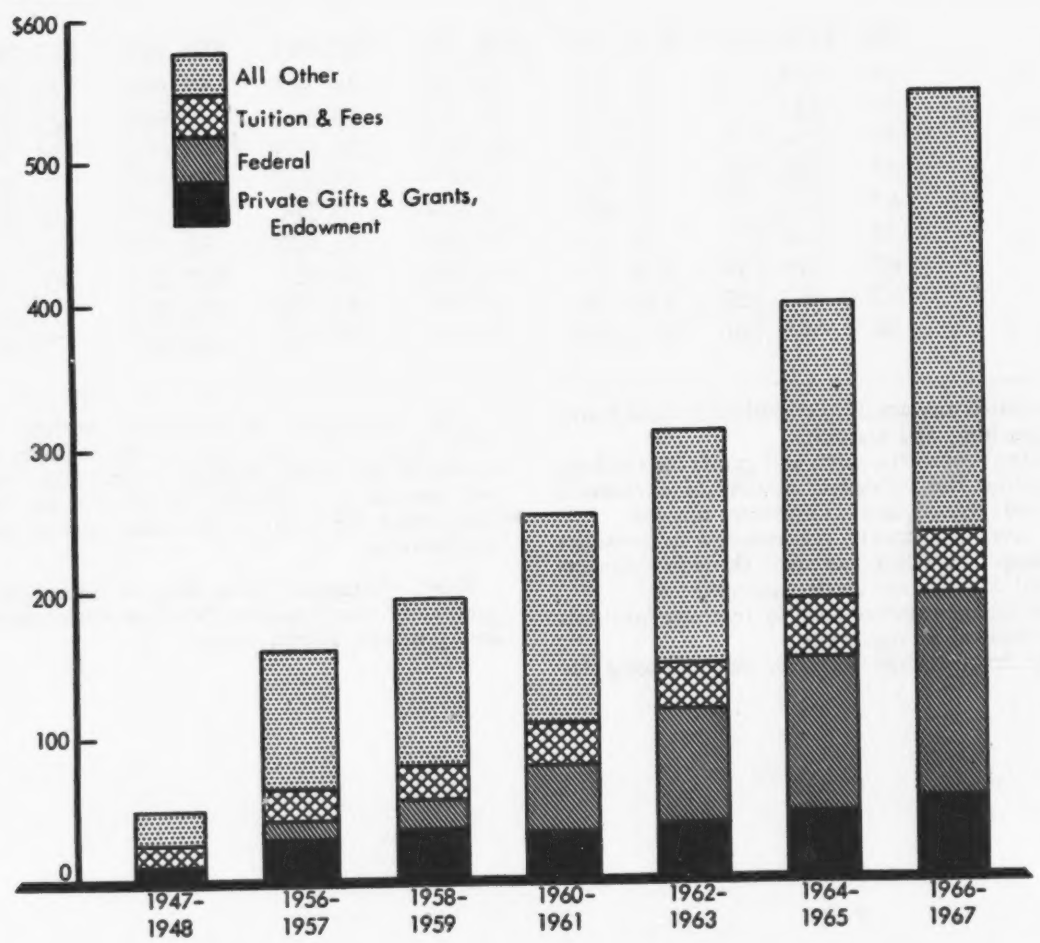


Table 21

Federal support for medical school research increased from $48.6 million in 1956–57 to $384.9 million in 1966–67, an increase of 692 percent. Total expenditures for sponsored research increased only 484 percent in the 10-year period.

Table 21

Medical school expenditures for sponsored research by source of funds: selected years 1956–57 through 1966–67

[In thousands of dollars]

Academic year	Number of medical schools	Total	Federal support [1]	Non-Federal support [2]
1956–57	85	$79, 588	$48, 641	$30, 947
1958–59	85	124, 524	81, 492	43, 032
1959–60	86	147, 342	101, 325	46, 017
1960–61	87	181, 781	129, 339	52, 442
1961–62	87	226, 474	174, 197	52, 277
1962–63	87	290, 927	229, 947	60, 980
1963–64	87	345, 929	282, 596	63, 333
1964–65	87	379, 946	313, 697	66, 249
1965–66	87	418, 864	346, 786	72, 078
1966–67	88	464, 616	384, 930	79, 686

[1] Includes the estimated amount of overhead on Federal grants and contracts for research.

[2] Includes non-Federal contracts, gifts, and grants for research (including the estimated amount of overhead); endowment income restricted for research; and other funds restricted for research.

Source: Computed from data in Education Number of the Journal of the American Medical Association, Nov. 25, 1968 and previous annual issues.

Tables 22 and 23

In 1947–48 the average medical school spent less than $0.9 million for basic operations and research. By 1966–67 the average expenditure had increased to $11.5 million. For basic operations the average expenditure increased from $0.7 million to $6.2 million in that period.

The average school of osteopathic medicine had a total budget of $2 million in 1960–61 and double that amount in 1966–67. Federal support for basic operations and research increased from $85,000 per school in 1960–61 to $318,000 per school in 1966–67.

Table 22

Average expenditure per medical school for basic operations and sponsored research: selected years 1947–48 through 1966–67

Academic year	Total	Basic operations	Sponsored research
1947–48	$894,000	$677,000	$217,000
1956–57	2,819,000	1,883,000	936,000
1958–59	3,753,000	2,288,000	1,465,000
1959–60	4,312,000	2,599,000	1,713,000
1960–61	5,012,000	2,923,000	2,089,000
1961–62	5,918,000	3,315,000	2,603,000
1962–63	6,933,000	3,589,000	3,344,000
1963–64	7,996,000	4,020,000	3,976,000
1964–65	8,950,000	4,583,000	4,367,000
1965–66	10,140,000	5,326,000	4,814,000
1966–67	11,481,000	6,201,000	5,280,000

Source: Computed from table 16.

Table 23

Average total budget per school of osteopathic medicine and average amount of Federal and other support: 1960–61 through 1966–67

Academic year	Total budget [1]	Federal support [2]	All other support [3]
1960–61	$1,962,000	$85,000	$1,877,000
1961–62	2,113,000	108,000	2,005,000
1962–63	2,335,000	130,000	2,205,000
1963–64	2,531,000	144,000	2,387,000
1964–65	2,825,000	154,000	2,671,000
1965–66	3,208,000	192,000	3,016,000
1966–67	3,994,000	318,000	3,676,000

[1] For 4 of the 5 schools includes the budget of the college hospital.

[2] Includes support for basic operations and for research.

[3] Includes tuition income, income from the American Osteopathic Progress Fund, philanthropic sources, alumni funds and bequests, State and local governments, reimbursements for faculty and department services, and reimbursements for patient care.

Source: Computed from table 17.

Tables 24 and 25

Total medical school expenditures have increased between 12 and 18 percent a year the last 10 years. The average annual increase in sponsored research was higher than that for basic operations until 1964–65. Since then the average annual percent increase in basic operations has been considerably higher than for sponsored research.

The annual increases in the total budgets of schools of osteopathic medicine have been irregular. The increase of 24 percent between the last 2 years is three times the increase in the earliest years. The increases in Federal support have been even more irregular.

Table 24

Average annual percent increase in medical school expenditures for basic operations and sponsored research: 1956–57 through 1966–67

Academic years	Total expenditures	Basic operations		Sponsored research	
		Total	Federal support	Total	Federal support
1956–57 to 1958–59 [1]	17	11	47	28	34
1958–59 to 1959–60	16	15	58	18	24
1959–60 to 1960–61	18	14	31	23	28
1960–61 to 1961–62	18	13	34	25	35
1961–62 to 1962–63	17	8	23	28	32
1962–63 to 1963–64	15	12	18	19	23
1963–64 to 1964–65	12	14	18	10	11
1964–65 to 1965–66	13	16	16	10	11
1965–66 to 1966–67	15	18	13	11	11

[1] Average of 2-year increase. Source: Computed from tables 16, 19, and 21.

Table 25

Average annual percent increase in total budgets of schools of osteopathic medicine and in Federal and other support: 1960–61 through 1966–67

Academic years	Total budget [1]	Federal support [2]	All other support [3]
1960–61 to 1961–62	8	26	7
1961–62 to 1962–63	11	20	10
1962–63 to 1963–64	8	11	8
1963–64 to 1964–65	12	7	12
1964–65 to 1965–66	14	24	13
1965–66 to 1966–67	24	66	22

[1] For 4 of the 5 schools includes the budget of the college hospital.

[2] Includes support for basic operations and for research.

[3] Includes tuition income, income from the American Osteopathic Progress Fund, philanthropic sources, alumni funds and bequests, State and local governments, reimbursements for faculty and department services, and reimbursements for patient care.

Source: Computed from table 17.

Tables 26 and 27

The number of approved internships offered has risen from 8,200 in 1941–42 to over 13,700 in 1967–68, an increase of 68 percent. During the same period, approved residency positions offered increased almost 700 percent.

Since the middle 1950's the proportion of internship and residency positions filled has fluctuated considerably. Of the positions filled an increasing proportion have been filled by graduates of foreign medical schools. This proportion reached 31 percent for internships and residencies combined in 1967–68.

Table 26

Approved internships and residencies, offered and filled: selected years 1941–42 through 1967–68

Year	Approved [1] internship positions			Approved [1] residency positions		
	Offered	Filled [2]	Filled by foreign graduates [3]	Offered	Filled [2]	Filled by foreign graduates [3]
1941–42	8, 182	.....	.....	5, 256	.....	.....
1945–46	8, 429	.....	.....	8, 930	.....	.....
1950–51	9, 370	7, 030	722	19, 364	14, 495	1, 350
1955–56	11, 616	9, 603	1, 859	26, 516	21, 425	4, 174
1960–61	12, 547	9, 115	1, 753	32, 786	28, 447	8, 182
1961–62	12, 074	8, 173	1, 273	35, 403	29, 637	7, 723
1962–63	12, 024	8, 805	1, 669	36, 502	29, 239	7, 062
1963–64	12, 229	9, 636	2, 566	37, 357	29, 485	7, 052
1964–65	12, 728	10, 097	2, 821	38, 750	31, 005	8, 153
1965–66	12, 954	9, 670	2, 361	38, 979	31, 898	9, 133
1966–67	13, 569	10, 366	2, 793	39, 384	32, 050	9, 502
1967–68	13, 761	10, 419	2, 913	41, 695	33, 743	10, 627

---

[1] Approved by the Council on Medical Education of the, American Medical Association. Includes positions in 50 States, District of Columbia, Canal Zone, and Puerto Rico.

[2] Data on interns and residents in approved filled positions are not comparable to the figures for interns and residents in tables 36 and 37. The latter tables are based on physicians' records in the Directory Department of the American Medical Association as of December 31 and include some physicians in unapproved positions. The present data are as of September 1.

[3] Excludes graduates of Canadian medical schools.

Source: Education Number of Journal of the American Medical Association, Nov. 25, 1968.

Table 27

Proportion of approved internships and residencies filled and proportion filled by foreign graduates: selected years 1950–51 through 1967–68

Year	Total		Approved[1] internships		Approved[1] residencies	
	Percent filled	Percent of filled filled by foreign graduates	Percent filled	Percent of filled filled by foreign graduates	Percent filled	Percent of filled filled by foreign graduates
1950–51	75	10	75	10	75	9
1955–56	81	19	83	19	81	19
1960–61	83	26	73	19	87	29
1961–62	80	24	68	16	84	26
1962–63	78	23	73	19	80	24
1963–64	79	25	79	27	79	24
1964–65	80	27	79	28	80	26
1965–66	80	28	75	24	82	29
1966–67	80	29	76	27	81	30
1967–68	80	31	76	28	81	31

[1] Approved by the Council on Medical Education of the American Medical Association.

Source: Computed from table 26.

Table 28

There is great variation from State to State in the proportion of approved internship and residency positions filled. A few small States had all internship positions filled in 1967. At the other extreme, three States had less than 50 percent of their internship positions filled.

No State had all residency positions filled and only two States had over 90 percent filled. No State (except Alaska with only three positions offered) had less than half of its residencies filled.

A few States had no graduates of foreign medical schools in internships, but in New Jersey 84 percent of the filled internships were filled by such graduates. All States with approved residency positions except South Dakota and Alaska had some graduates of foreign medical schools filling these positions.

Table 28

Interns and residents on duty in approved positions in each State: September 1, 1967

Geographic division and State	Approved [1] internships				Approved [1] residencies			
	Positions filled			Percent filled	Positions filled			Percent filled
	Total	Graduates of U.S. and Canadian schools	Foreign graduates		Total	Graduates of U.S. and Canadian schools	Foreign graduates	
All locations [2]	10, 419	7, 506	2, 913	76	33, 743	[3] 23, 116	[3] 10, 627	[3] 81
United States	10, 345	7, 442	2, 903	76	33, 269	22, 795	10, 474	82
New England	716	463	253	84	2, 536	1, 622	914	85
Connecticut	219	106	113	74	620	350	270	84
Maine	12	12	....	100	28	21	7	78
Massachusetts	389	284	105	89	1, 635	1, 091	544	87
New Hampshire	19	17	2	100	48	40	8	70
Rhode Island	63	30	33	82	113	42	71	77
Vermont	14	14	....	100	92	78	14	91
Middle Atlantic	2, 902	1, 580	1, 322	77	8, 960	4, 879	4, 081	81
New Jersey	366	57	309	69	563	148	415	51
New York	1, 750	990	760	80	6, 143	3, 226	2, 917	87
Pennsylvania	786	533	253	74	2, 254	1, 505	749	78
South Atlantic	1, 372	1, 060	312	73	4, 645	3, 303	1, 342	83
Delaware	11	8	3	61	49	17	32	52
District of Columbia	224	163	61	81	884	588	296	87
Florida	244	176	68	71	727	488	239	86
Georgia	168	161	7	71	503	431	72	73
Maryland	306	181	125	82	1, 079	652	427	92
North Carolina	153	142	11	71	552	510	42	83
South Carolina	42	42	....	48	161	151	10	68
Virginia	188	162	26	78	560	402	158	78
West Virginia	36	25	11	40	130	64	66	68
East South Central	410	397	13	72	1, 264	1, 071	193	76
Alabama	89	89	....	72	232	211	21	68
Kentucky	98	89	9	70	291	212	79	75
Mississippi	32	32	....	60	121	108	13	80
Tennessee	191	187	4	75	620	540	80	79
West South Central	762	718	44	77	2, 223	1, 878	345	80
Arkansas	31	31	....	52	141	134	7	79
Louisiana	186	182	4	78	558	477	81	76
Oklahoma	116	115	1	74	205	186	19	73
Texas	429	390	39	81	1, 319	1, 081	238	82

Table 28—Continued

Interns and residents on duty in approved positions in each State: September 1, 1967—Continued

Geographic division and State	Approved [1] internships: Positions filled: Total	Approved [1] internships: Positions filled: Graduates of U.S. and Canadian schools	Approved [1] internships: Positions filled: Foreign graduates	Approved [1] internships: Percent filled	Approved [1] residencies: Positions filled: Total	Approved [1] residencies: Positions filled: Graduates of U.S. and Canadian schools	Approved [1] residencies: Positions filled: Foreign graduates	Approved [1] residencies: Percent filled
East North Central..	1, 992	1, 204	788	73	6, 317	3, 772	2, 545	83
Illinois...........	701	369	332	82	1, 848	1, 011	837	87
Indiana...........	108	107	1	59	298	275	23	70
Michigan.........	388	244	144	66	1, 695	973	722	86
Ohio.............	637	374	263	74	1, 943	1, 096	847	81
Wisconsin........	158	110	48	68	533	417	116	76
West North Central.	571	495	76	59	2, 830	2, 140	690	80
Iowa.............	74	58	16	61	280	228	52	89
Kansas...........	44	35	9	56	337	234	103	79
Minnesota........	163	151	12	67	1, 167	911	256	82
Missouri.........	230	193	37	57	886	626	260	77
Nebraska.........	46	45	1	44	141	125	16	67
North Dakota....	2	1	1	17	12	9	3	86
South Dakota.....	12	12	....	100	7	7	....	78
Mountain..........	298	252	46	77	670	541	129	73
Arizona..........	90	52	38	85	119	53	66	78
Colorado.........	161	154	7	80	352	309	43	80
Idaho............	....	....	....	....	....	....	....	....
Montana..........	....	....	....	....	....	....	....	....
Nevada...........	....	....	....	....	....	....	....	....
New Mexico......	19	19	....	100	64	50	14	54
Utah.............	28	27	1	47	135	129	6	68
Wyoming..........	....	....	....	....	....	....	....	....
Pacific............	1, 322	1, 273	49	88	3, 824	3, 589	235	83
Alaska...........	....	....	....	....	1	1	....	33
California.......	1, 051	1, 017	34	88	3, 051	2, 890	161	83
Hawaii...........	69	59	10	91	123	102	21	87
Oregon...........	76	75	1	85	236	215	21	82
Washington......	126	122	4	87	413	381	32	85
Puerto Rico.........	58	48	10	57	215	93	122	60
Canal Zone.........	16	16	....	100	25	16	9	81

---

[1] Approved by the Council on Medical Education of the American Medical Association.

[2] Includes the United States, Puerto Rico, and the Canal Zone.

[3] Includes the following numbers of residents in agencies other than hospitals, for which State location is not known: Total filled, 234; filled by graduates of U.S. and Canadian schools, 212; filled by foreign graduates, 22.

Source: Education Number of Journal of the American Medical Association, Nov. 25, 1968.

Number of Physicians

Statistics on the number, characteristics, and distribution of physicians, both M.D. and D.O., are available primarily from the professional associations—the American Medical Association and the American Osteopathic Association. Over the years these association have revised and improved their statistics on physicians. Some of the changes which make it impossible to show comparable data over a long period of time are indicated in the following paragraphs.

Late in 1963, a meeting was called by the Federal Office of Emergency Planning to discuss "uniformity and accuracy in the compliation of national health manpower statistics." A list of the governmental agencies and nongovernmental associations represented at the meeting and details of the decisions made were reported in *Public Health Reports* in 1964.[1]

The changes made at this time in physician statistics which effect the comparability of trend data include:

1. The reporting date for physicians (M.D.) was changed from midyear to December 31st. The midyear data had not included graduates of the current year while data as of December 31st does include such graduates. Adjustments were made to the new reporting date in the data on physicians (M.D.) for the years 1950, 1955, and 1960. Detailed data for each year 1963–67 have been published by the American Medical Association as of December 31st. Data for physicians (D.O.) were already as of that date.

2. The American Medical Association had not included in the United States physician supply foreign physicians in internship and residency training who indicated that they planned to return to their own countries on completion of training. Since such trainees provide medical service while in training, it was decided that all trainees should be included in the physician statistics. Using data on filled positions for interns and residents from the American Medical Association Directory of Approved Internships and Residencies, the statistics for 1960 were adjusted to include all trainees.

3. Sizeable numbers of foreign physicians (other than interns and residents) who were not licensed but were providing medical services through research and other forms of practice had not been included in the American Medical Association statistics. Thousands of these physicians were added to the totals in 1961–63 when they received certificates from the Educational Council for Foreign Medical Graduates. No attempt was made to adjust earlier figures to include these foreign graduates.

4. Data for the earlier years included physicians (M.D.) in 48 States and the District of Columbia. Beginning in 1960, data are for 50 States, the District of Columbia, Puerto Rico, and outlying areas. The data for 1950 and 1955 have been adjusted to include the larger area.

Because of these changes, the tables which follow show one series of data for 1931–59 and another series for 1950–67. Many tables include data for 1963–67 because the detailed data in them are available only for those years. Detailed data for osteopathic physicians are not available prior to 1950. Estimates of the total number of such physicians have been made at 10,500 for 1931 and 12,400 for 1940.[2]

---

[1] Pennell, Maryland Y. Statistics on Physicians, 1950–63. *Public Health Reports* 79: 905–910, October 1964.

[2] Department of Health, Education, and Welfare; Public Health Service; Division of Public Health Methods. Health Manpower Source Book 9. Physicians, Dentists, and Professional Nurses. Public Health Service Publication No. 263, Sec. 9. Washington, U.S. Government Printing Office, 1959.

The two series of figures for physicians (M.D.) with the numbers of the tables in which they appear are shown below:

Series A: Midyear data, 48 States and the District of Columbia, many foreign graduates not included—tables 2, 3, 11

Series B: Data as of December 31, 50 States, the District of Columbia, Puerto Rico, outlying areas, and address unknown—tables 4–20

Year	Series A	Series B
1940	175, 163	
1949	201, 277	
1950		219, 997
1955		241, 711
1957	226, 625	
1959	236, 089	
1960		260, 484

Other changes made by the American Medical Association in 1967 concern type of practice and specialty. A discussion of the effects of these changes will be found preceding table 43.

Table 29

Figures on the number of physicians for the earlier years shown in this table are approximations at best. Data prior to 1910 may include some osteopathic physicians, chiropractors, naturopaths, etc. After that date the information is from the American Medical Directories and not likely to include those who were not M.D.'s. The figures do include many physicians who received their degrees from the marginal medical schools which closed in the years after the publication of the "Flexner Report" in 1910.

The table shows an increase from 60,000 physicians in 1870 to 152,500 in 1929. The ratio of physicians to population dropped steadily during this period from 150 to 125 per 100,000 population.

Table 29

Number of physicians (M.D.) and physician/population ratios: selected years 1870–1929

Year	Number of physicians	Population (thousands)	Physicians per 100,000 population
1870	60, 000	39, 905	150
1880	82, 000	50, 262	163
1890	100, 180	63, 056	159
1900	119, 749	76, 094	157
1910	135, 000	92, 407	146
1916	145, 241	101, 966	142
1921	145, 404	108, 541	134
1925	147, 010	115, 832	127
1929	152, 503	121, 770	125

Source: U.S. Bureau of the Census. Historical Statistics of the United States, Colonial Times to 1957. Washington, U.S. Government Printing Office, 1960.

U.S. Department of Health, Education, and Welfare; Public Health Service; Division of Public Health Methods. Health Manpower Source Book 9. Physicians, Dentists, and Professional Nurses. Public Health Service Publication No. 263, Sec. 9. Washington, U.S. Government Printing Office, 1959.

Table 30

The total number of physicians (M.D.) increased from 156,400 in 1931 to 236,100 in 1959 and the ratio to population rose from 126 to 133 physicians per 100,000 persons in that period. Data on active physicians, available since 1931, show an increase from 150,400 in 1931 to 225,800 in 1959, with an increase in the physician/population ratio from 121 to 128.

The number of physicians (M.D.) in Federal service increased tremendously from 1931 to 1959. Much of this increase is accounted for by the increase of physicians in the armed forces. The data for 1931, 1940, and 1949 are not entirely comparable with those for 1957 and 1959 because the earlier figures for Federal physicians do not include interns and residents. The number of Federal physicians in 1959 (excluding interns and residents) was 15,616, an increase of 340 percent over the 1931 figure of 3,551.

Although the number of non-Federal physicians (M.D.) in active practice increased from 146,900 in 1931 to 208,300 in 1959, the ratio to population was the same in both years, 119 per 100,000 population.

Active non-Federal physicians in private practice in relation to the civilian population actually declined from 108 to 92 per 100,000 population between 1931 and 1959.

Table 30

Number of physicians (M.D.) and physician/population ratios: selected years 1931–59

Year [1]	Number of physicians (M.D.) [2]		Population [3] (thousands)	Physicians (M.D.) per 100,000 population	
	Total	Active		Total	Active
1931	156, 406	150, 425	124, 149	126	121
1940	175, 163	165, 290	132, 122	133	125
1949	201, 277	191, 577	149, 188	135	128
1957	226, 625	215, 964	171, 196	132	126
1959	236, 089	225, 772	176, 912	133	128

Year [1]	Number of active physicians (M.D.) [2]			Civilian population (thousands)	Active non-Federal physicians (M.D.), per 100,000 civilian population	
	Federal	Non-Federal				
		Total	Private practice		Total	Private practice
1931	3, 551	146, 874	134, 274	123, 886	119	108
1940	4, 793	160, 497	142, 939	131, 658	122	109
1949	12, 536	179, 041	150, 419	147, 578	121	102
1957	16, 598	199, 366	155, 827	168, 368	118	93
1959	17, 519	208, 253	160, 592	174, 409	119	92

---

[1] Midyear.

[2] Includes Federal physicians in the U.S. and abroad and non-Federal physicians in the 48 States and District of Columbia.

[3] Includes the Armed Forces in the United States and abroad and civilians in the 48 States and District of Columbia.

Source: Stewart, William H. and Pennell, Maryland Y. Health Manpower Source Book 10. Physicians' Age, Type of Practice, and Location. Public Health Service Publication No. 263, Sec. 10. Washington, U.S. Government Printing Office, 1960.

Table 31

Data on physicians (M.D.) prior to 1960 did not include foreign physicians in training programs in the United States. In 1962, the Public Health Service adjusted the data on active physicians for 1931–59 to include these physicians. The adjustment raised the total number of active physicians in 1931 from 150,425 to 152,425; for 1959 the increase was from 225,772 to 236,161.

Table 31

Number of active physicians (M.D.) and those in training programs, reported and adjusted figures: selected years 1931–59

Year [1]	Number of active physicians (M.D.) reported [2]				Adjusted number of active physicians (M.D.) [3]			
	Total	Training programs			Total	Training programs [3]		
		Total	Interns	Residents		Total	Interns	Residents
1931	150,425	5,200	....	....	152,425	7,200	5,500	1,700
1940	165,290	8,320	5,348	2,972	168,770	11,800	7,654	4,146
1949	191,577	18,448	....	....	196,577	23,448	7,248	16,200
1957	215,964	24,642	6,905	17,737	224,227	32,905	9,893	23,012
1959	225,772	26,721	8,490	18,231	236,161	37,110	10,352	26,758

[1] Midyear.

[2] Includes Federal physicians in the United States and abroad and non-Federal physicians in the 48 States and District of Columbia.

[3] Adjustment consists of adding an estimated number of Canadian and other foreign physicians intending to return home on completion of their training.

Source: Computed from data in: Peterson, Paul Q. and Pennell, Maryland Y. Health Manpower Source Book 14. Medical Specialists. Public Health Service Publication No. 263, Sec. 14. Washington, U.S. Government Printing Office, 1962.

Table 32

Beginning in 1950 detailed data are available on osteopathic physicians. The total of doctors of medicine and doctors of osteopathy for that year was 232,700; by 1967 the total had increased to 322,000. In terms of active physicians the ratio to population increased from 141 per 100,000 population in 1950 to 150 per 100,000 in 1967.

In 1962 the College of Osteopathic Physicians and Surgeons in California became the California College of Medicine, a fully accredited medical school. This school granted some 2,400 M.D. degrees as of 1962 to osteopathic physicians in California who were graduates of the College of Osteopathic Physicians and Surgeons. This accounts for the decrease in the number of D.O.'s between 1960 and 1963.

351-032 O-69—4

Table 32

Number of physicians and physician/population ratios: selected years 1950–67

Year [1]	Number of physicians			Population (thousands)	Total physicians per 100,000 population
	Total	M.D.	D.O.		
	Active and inactive physicians [2]			Total [3]	
1950	232,697	219,997	12,700	156,472	149
1955	255,211	241,711	13,500	170,499	150
1960	274,834	260,484	14,350	185,370	148
1963	289,188	276,475	12,713	194,169	149
1964	297,089	284,224	12,865	196,858	151
1965	305,115	292,088	13,027	199,278	153
1966	313,559	300,375	13,184	201,585	156
1967	322,045	308,630	13,415	203,708	158
	Active physicians [4]			Total [3]	
1950	[5] 219,897	208,997	[5] 10,900	156,472	141
1955	[5] 240,153	228,553	[5] 11,600	170,499	141
1960	259,433	247,257	12,176	185,370	140
1963	272,500	261,728	10,772	194,169	140
1964	280,461	269,552	10,909	196,858	142
1965	288,671	277,575	11,096	199,278	145
1966	297,097	285,857	11,240	201,585	147
1967	305,453	294,072	11,381	203,708	150
	Active non-Federal physicians			Civilian	
1950	[5,6] 207,321	[6] 196,421	[5] 10,900	153,635	135
1955	[5,6] 227,196	[6] 215,596	[5] 11,600	167,038	136
1960	[6] 245,215	[6] 233,045	12,170	182,349	134
1963	250,575	239,814	10,761	190,892	131
1964	258,602	247,709	10,893	193,612	134
1965	265,835	254,761	11,074	195,833	136
1966	270,890	259,679	11,211	197,662	137
1967	277,729	266,520	11,209	199,783	139

---

[1] As of Dec. 31st.

[2] Includes Federal physicians in the United States and abroad and non-Federal physicians in the 50 States, District of Columbia, Puerto Rico, American Samoa, Canal Zone, Guam, U.S. Pacific Islands, Virgin Islands, and those with addresses temporarily unknown to the American Medical Association. Excludes non-Federal physicians with temporary foreign addresses.

[3] Includes the Armed Forces in the United States and abroad, civilians in the 50 States, District of Columbia, Puerto Rico, and other U.S. outlying areas, and U.S. Government and civilian employees, their dependents, and dependents of Armed Forces personnel abroad.

[4] Excludes inactive physicians, those with addresses unknown, and those with status not reported.

[5] Estimated by the Bureau of Health Professions Education and Manpower Training, Division of Physician Manpower.

[6] Includes Federal interns and residents.

Source: U.S. Department of Health, Education and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, Health Manpower, 1965. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1966.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 33

The total number of active physicians (M.D. and D.O.) has increased from 207,300 in 1950 to 277,700 in 1967. The data on Federal and non-Federal physicians (M.D.) for 1950, 1955, and 1960 are not comparable with those for later years because Federal interns and residents were included with non-Federal interns and residents in the earlier years. The number of Federal physicians (M.D.) in 1967 exclusive of interns and residents was 23,300 or an increase of 85 percent over 1950.

Table 33

Number of physicians, by type of practice: selected years 1950–67

Year [1]	Total	Federal [2]	Active non-Federal [3]				Inactive, address unknown, status not reported
			Total	Private practice	Training [4]	Other [5]	
			Total physicians (M.D. and D.O.)				
1950	232,697	[6,7] 12,576	[6,8] 207,321	168,089	......	......	[6] 12,800
1955	255,211	[6,7] 12,957	[6,8] 227,196	169,871	......	......	[6] 15,058
1960	274,834	[7] 14,218	[8] 245,215	179,176	[8] 38,291	27,748	15,401
1963	289,188	21,925	250,575	184,792	35,808	29,975	16,688
1964	297,089	21,859	258,602	188,430	38,160	32,012	16,628
1965	305,115	22,836	265,835	190,748	40,372	34,715	16,444
1966	313,559	26,207	270,890	192,616	41,464	36,810	16,462
1967	322,045	27,724	277,729	......	43,365	......	16,592
			M.D.				
1950	219,997	[7] 12,576	[8] 196,421	158,189	[8] 21,416	16,816	11,000
1955	241,711	[7] 12,957	[8] 215,596	159,371	[8] 31,028	25,197	13,158
1960	260,484	[7] 14,212	[8] 233,045	168,142	[8] 37,562	27,341	13,227
1963	276,475	21,914	239,814	174,974	35,153	29,687	14,747
1964	284,224	21,843	247,709	178,528	37,473	31,708	14,672
1965	292,088	22,814	254,761	180,752	39,604	34,405	14,513
1966	300,375	26,178	259,679	182,502	40,709	36,468	14,518
1967	308,630	27,552	266,520	(9)	42,590	(9)	14,558
			D.O.				
1950	12,700	(10)	[6] 10,900	9,900	......	......	[6] 1,800
1955	13,500	(10)	[6] 11,600	10,500	......	......	[6] 1,900
1960	14,350	6	12,170	11,034	729	407	2,174
1963	12,713	11	10,761	9,818	655	288	1,941
1964	12,865	16	10,893	9,902	687	304	1,956
1965	13,027	22	11,074	9,996	768	310	1,931
1966	13,184	29	11,211	10,114	755	342	1,944
1967	13,415	172	11,209	10,067	775	367	2,034

---

[1] As of December 31st.

[2] Includes Federal physicians in the U.S. and abroad.

[3] Includes non-Federal physicians in the 50 States, District of Columbia, Puerto Rico, American Samoa, Canal Zone, Guam, U.S. Pacific Islands, and Virgin Islands.

[4] Includes interns, residents, and fellows.

[5] Includes full-time hospital staff (other than interns, residents, and fellows), medical school faculty, and physicians in administrative medicine, laboratory medicine, preventive medicine, and research.

[6] Estimated by the Bureau of Health Professions Education and Manpower Training, Division of Physician Manpower.

[7] Excludes Federal interns and residents.

[8] Includes Federal interns and residents.

[9] Beginning in 1967 the American Medical Association discontinued the use of the category "private practice," added a category called "patient care" and reallocated several of the activity categories previously included in "other." See table 35 for data in the new categories.

[10] Number of D.O.'s in Federal service was probably 0 to 5.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, Health Manpower, 1965. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1966.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Theodore, C. N.; Sutter, G. E.; and Jokiel, E. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1966. Chicago, American Medical Association, 1967.

Table 34

The number of physicians (M.D. and D.O.) in private practice increased from 168,089 in 1950 to 192,616 in 1966 (the last year for which this category is available). In relation to the civilian population the ratio of physicians in private practice has dropped from 109 per 100,000 in 1950 to 97 per 100,000 in 1966.

Table 34

Number of physicians in private practice and physician/population ratios: selected years 1950–67

Year [1]	Number of physicians in private practice			Civilian population (thousands)	Physicians in private practice per 100,000 civilian population
	Total	M.D.	D.O.		
1950	168, 089	158, 189	9, 900	153, 635	109
1955	169, 871	159, 371	10, 500	167, 038	102
1960	179, 176	168, 142	11, 034	182, 349	98
1963	184, 792	174, 974	9, 818	190, 892	97
1964	188, 430	178, 528	9, 902	193, 612	97
1965	190, 748	180, 752	9, 996	195, 833	97
1966	192, 616	182, 502	10, 114	197, 662	97
1967	....	(²)	10, 067	199, 783	....

[1] As of December 31st.

[2] Beginning in 1967 the American Medical Association discontinued the use of the category "private practice."

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, Health Manpower, 1965. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1966.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Theodore, C. N.; Sutter, G. E.; and Jokiel, E. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1966. Chicago, American Medical Association, 1967.

Table 35

Since 1963 the number of active non-Federal physicians increased from 250,600 to 277,700 in 1967. Physicians "providing patient care" increased from 237,700 to 260,300 in the same period.

During this period the number of physicians on medical and osteopathic school faculties increased 36 percent, reflecting the recent expansion in the number and size of schools. Physicians engaged in administration increased 27 percent, while those in research increased 42 percent in the same period.

Table 35

Number of active non-Federal physicians, by type of practice: 1963–67

Year [1]	Active non-Federal physicians [2]	Physicians providing patient care [3]	Medical or osteopathic school faculty	Administration	Research
	Total (M.D. and D.O.)				
1963	250, 575	237, 673	8, 286	2, 233	2, 376
1964	258, 602	244, 542	8, 971	2, 420	2, 662
1965	265, 835	250, 208	9, 895	2, 538	3, 182
1966	270, 890	254, 396	10, 613	2, 640	3, 221
1967	277, 729	260, 296	11, 293	2, 754	3, 352
	M.D.				
1963	239, 814	227, 027	8, 190	2, 221	2, 376
1964	247, 709	233, 772	8, 869	2, 406	2, 662
1965	254, 761	239, 262	9, 794	2, 523	3, 182
1966	259, 679	243, 333	10, 503	2, 622	3, 221
1967	266, 520	249, 273	11, 166	2, 729	3, 352
	D.O.				
1963	10, 761	10, 646	96	12	....
1964	10, 893	10, 770	102	14	....
1965	11, 074	10, 946	101	15	....
1966	11, 211	11, 063	110	18	....
1967	11, 209	11, 023	127	25	....

---

[1] As of Dec. 31st.

[2] For D.O.'s totals include physicians in other types of practice not shown separately, therefore figures do not add across.

[3] See table 36 for a breakdown of patient care.

Source: Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968. Also previous annual publications.

American Osteopathic Association, Membership and Statistics Department. A Statistical Study of the Osteopathic Profession, Dec. 31, 1967. Chicago, The Association, June 1968. Also previous annual publications.

Tables 36 and 37

The components of the category of physicians (M.D.) "providing patient care" are solo, partnership, group, and other practice (physicians rendering patient care who are salaried or retained by other physicians or employed by non-Federal organizations other than hospitals); interns and residents; and full-time hospital staff. For physicians (D.O.) the category includes those in private practice, interns, residents, and full-time hospital staff.

In 1967, the total number of physicians providing patient care was 285,400, an increase of 11 percent over 1963. Of these physicians 274,200 were M.D.'s and 11,200 were D.O.'s. There were 25,100 physicians (M.D. and D.O.) in the Federal service and 260,300 non-Federal physicians providing patient care in 1967.

Table 36

Number of physicians providing patient care: 1963–67

Year [1]	Total physicians providing patient care	Solo, partnership, group, and other [2] practice	Hospital based		
			Interns	Residents and fellows	Full-time staff
			Total		
1963	257, 608	189, 267	9, 884	29, 287	29, 170
1964	264, 329	192, 978	10, 222	31, 473	29, 656
1965	270, 386	195, 334	10, 078	34, 196	30, 778
1966	277, 858	197, 214	10, 604	35, 088	34, 952
1967	285, 385	200, 146	10, 948	36, 683	37, 608
			M.D.		
1963	246, 951	179, 449	9, 517	28, 999	28, 986
1964	253, 543	183, 076	9, 865	31, 143	29, 459
1965	259, 418	185, 338	9, 682	33, 824	30, 574
1966	266, 766	187, 100	10, 247	34, 690	34, 729
1967	274, 190	190, 079	10, 549	36, 307	37, 255
			D.O.		
1963	10, 657	[3] 9, 818	367	288	184
1964	10, 786	[3] 9, 902	357	330	197
1965	10, 968	[3] 9, 996	396	372	204
1966	11, 092	[3] 10, 114	357	398	223
1967	11, 195	[3] 10, 067	399	376	353

[1] As of Dec. 31st.

[2] Includes physicians (M.D.) who render patient care and who are salaried or retained by other physicians or employed by non-Federal organizations other than hospitals.

[3] Includes physicians (D.O.) in private practice.

Source: Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968. Also previous annual publications.

American Osteopathic Association, Membership and Statistics Department. A Statistical Study of the Osteopathic Profession, Dec. 31, 1967. Chicago, The Association, June 1968. Also previous annual publications.

Table 37

Number of Federal and non-Federal physicians providing patient care: 1963–67

Year [1]	Total physicians providing patient care	Solo, partnership, group, and other [2] practice	Hospital based		
			Interns	Residents and fellows	Full-time staff
Total Federal					
1963	19,935		600	2,763	16,572
1964	19,787		548	2,987	16,252
1965	20,178		633	3,269	16,276
1966	23,462		691	3,537	19,234
1967	25,089		681	3,585	20,823
Federal M.D.					
1963	19,924		600	2,763	16,561
1964	19,771		548	2,987	16,236
1965	20,156		633	3,269	16,254
1966	23,433		691	3,537	19,205
1967	24,917		681	3,585	20,651
Federal D.O.					
1963	11				11
1964	16				16
1965	22				22
1966	29				29
1967	172				172
Total non-Federal					
1963	237,673	189,267	9,284	26,524	12,598
1964	244,542	192,978	9,674	28,486	13,404
1965	250,208	195,334	9,445	30,927	14,502
1966	254,396	197,214	9,913	31,551	15,718
1967	260,296	200,146	10,267	33,098	16,785
Non-Federal M.D.					
1963	227,027	179,449	8,917	26,236	12,425
1964	233,772	183,076	9,317	28,156	13,223
1965	239,262	185,338	9,049	30,555	14,320
1966	243,333	187,100	9,556	31,153	15,524
1967	249,273	190,079	9,868	32,722	16,604
Non-Federal D.O.					
1963	10,646	[3] 9,818	367	288	173
1964	10,770	[3] 9,902	357	330	181
1965	10,946	[3] 9,996	396	372	182
1966	11,063	[3] 10,114	357	398	194
1967	11,023	[3] 10,067	399	376	181

---

[1] As of Dec. 31st.

[2] Includes physicians (M.D.) who render patient care and who are salaried or retained by other physicians or employed by non-Federal organizations other than hospitals.

[3] Includes physicians (D.O.) in private practice.

Source: Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968. Also previous annual publications.

American Osteopathic Association, Membership and Statistics Department. A Statistical Study of the Osteopathic Profession, Dec. 31, 1967. Chicago, The Association, June 1968. Also previous annual publications.

Table 38

The ratio of total physicians providing patient care to population increased from 127 per 100,000 persons in 1963 to 135 per 100,000 in 1967. In relation to civilian population the ratio of non-Federal physicians providing patient care was 125 per 100,000 in 1963 and 130 in 1967.

Table 38

Number of physicians providing patient care and physician/population ratios: 1963–67

Year[1]	Number of physicians providing patient care			Population (thousands)	Physicians per 100,000 population
	Total	M.D.[2]	D.O.[3]		
	Total physicians			Total[4]	
1963	257, 608	246, 951	10, 657	194, 169	133
1964	264, 329	253, 543	10, 786	196, 858	134
1965	270, 386	259, 418	10, 968	199, 278	136
1966	277, 858	266, 766	11, 092	201, 585	138
1967	285, 385	274, 190	11, 195	203, 708	140
	Non-Federal physicians			Civilian	
1963	237, 673	227, 027	10, 646	190, 892	125
1964	244, 542	233, 772	10, 770	193, 612	126
1965	250, 208	239, 262	10, 946	195, 833	128
1966	254, 396	243, 333	11, 063	197, 662	129
1967	260, 296	249, 273	11, 023	199, 783	130

[1] As of December 31st.

[2] Includes physicians in solo, partnership, group and other practice; interns and residents; and full-time hospital staff.

[3] Includes physicians in private practice, in training, and full-time hospital staff.

[4] Includes the Armed Forces in the U.S. and abroad, civilians in 50 States, District of Columbia, Puerto Rico, and other outlying areas, and U.S. citizens abroad.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Tables 39 and 40

Total physicians (M.D. and D.O.) in Federal service increased from 21,900 in 1963 to 27,700 in 1967, an increase of 26 percent. During the same period the increase in Federal physicians engaged in research rose 41 percent.

The greatest relative increase for physicians (M.D.) between 1963 and 1967 among the branches of Federal service was 36 percent for the Army.

Table 39

Number of Federal physicians, by type of practice: 1963–67

Year [1]	Total Federal physicians [2]	Patient care [3]	Administration	Research
	Total (M.D. and D.O.)			
1963	21, 925	19, 935	1, 111	879
1964	21, 859	19, 787	1, 107	965
1965	22, 836	20, 178	1, 534	1, 124
1966	26, 207	23, 462	1, 521	1, 224
1967	27, 724	25, 089	1, 392	1, 243
	M.D.			
1963	21, 914	19, 924	1, 111	879
1964	21, 843	19, 771	1, 107	965
1965	22, 814	20, 156	1, 534	1, 124
1966	26, 178	23, 433	1, 521	1, 224
1967	27, 552	24, 917	1, 392	1, 243
	D.O.			
1963	11	11	(4)	(4)
1964	16	16	(4)	(4)
1965	22	22	(4)	(4)
1966	29	29	(4)	(4)
1967	172	172	(4)	(4)

[1] As of December 31st.

[2] Includes physicians in the United States and abroad.

[3] Includes physicians who are interns, residents, and full-time on hospital staffs.

[4] All D.O.'s in Federal service are counted as on hospital staffs.

Source: Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968. Also previous annual publications.

American Osteopathic Association, Membership and Statistics Department. A Statistical Study of the Osteopathic Profession Dec. 31, 1967. Chicago, The Association, June 1968. Also previous annual publications.

Table 40

Number of Federal physicians (M.D.), by branch of service: 1963–67

Year [1]	Total Federal physicians (M.D.) [2]	Air Force	Army	Navy	Public Health Service	Veterans Administration	Other
1963	21, 914	3, 800	4, 961	3, 722	2, 974	6, 457	....
1964	21, 843	3, 847	4, 670	3, 752	2, 985	6, 589	....
1965	22, 814	3, 872	5, 036	3, 836	2, 963	6, 790	317
1966	26, 178	4, 484	6, 250	4, 378	3, 384	7, 152	530
1967	27, 552	4, 692	6, 730	4, 714	3, 588	7, 139	689

[1] As of December 31st.

[2] Includes physicians in the U.S. and abroad.

Source: Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968. Also previous annual publications.

Table 41 and Figure 6

Information in this table on physicians (M.D.) in full-time specialty practice excludes interns and residents. In data for later years interns and residents are allocated to the specialties for which they are training.

The number of active physicians who were in specialty practice increased from 24,800 in 1931 to 114,600 in 1960 or about 360 percent. All specialties shown in the table showed increases.

The number of general practitioners shown in the table declined from 120,400 to 85,300 between 1931 and 1960. If specialists in internal medicine and pediatrics (who fill the function of general practitioners to some extent) are added to the number of general practitioners, physicians available for family practice have dropped from 126,000 in 1931 to 118,300 in 1960, a decrease of 6 percent in a period when the population increased over 45 percent.

Table 41

Number of active physicians (M.D.) in selected specialties and in training programs: selected years 1931–60

Type of practice and specialty	Midyear				
	1931	1940	1949	1957	1960
Total active physicians (M.D.), adjusted [1] [2]	152, 425	168, 770	196, 577	224, 227	237, 689
General practice [3]	120, 399	120, 090	110, 441	96, 904	85, 268
Full-time specialty: Total	24, 826	36, 880	62, 688	94, 418	114, 578
Internal medicine	4, 003	6, 449	11, 588	18, 687	22, 459
Subspecialties of internal medicine [4]	[5] 465	[5] 620	1, 955	2, 333	2, 847
Obstetrics and gynecology	1, 418	2, 551	5, 074	8, 147	10, 257
Ophthalmology and otolaryngology	6, 410	7, 608	9, 224	9, 952	10, 358
Pathology	518	987	1, 730	2, 911	3, 804
Pediatrics [6]	1, 568	2, 416	4, 315	7, 473	9, 157
Psychiatry and neurology [7]	1, 401	2, 400	4, 720	8, 172	10, 543
Radiology	1, 005	1, 589	2, 866	4, 742	5, 659
Surgery (general)	4, 320	6, 645	9, 931	13, 743	17, 027
Surgical specialties [8]	804	[9] 1, 078	3, 231	5, 882	7, 278
All other specialties	2, 914	4, 537	8, 054	12, 376	15, 189
Interns and residents, adjusted [2]	7, 200	11, 800	23, 448	32, 905	37, 843

---

[1] Includes Federal physicians in the United States and abroad and non-Federal physicians in the 48 States and District of Columbia.

[2] Adjustment consists of adding an estimated number of Canadian and other foreign physicians intending to return home on completion of their training.

[3] Includes also part-time specialists, physicians not reporting any specialty, and those reporting specialties "not recognized" by the American Medical Association.

[4] Includes allergy, cardiovascular disease, gastroenterology, and pulmonary diseases.

[5] Includes pulmonary diseases only, other subspecialties included with internal medicine.

[6] Includes also pediatric allergy and pediatric cardiology.

[7] Includes also child psychiatry.

[8] Includes neurological surgery, orthopedic surgery, plastic surgery, proctology (colon and rectal surgery), and thoracic surgery.

[9] Includes orthopedic surgery only, other specialties included with general surgery.

Source: Compiled from data in: Peterson, Paul Q. and Pennell, Maryland Y. Health Manpower Source Book 14. Medical Specialists. Public Health Services Publication No. 263, Sec. 14. Washington, U.S. Government Printing Office, 1962.

N

FIGURE 6.—Active physicians (M.D.) by type of practice: selected years 1931–67.

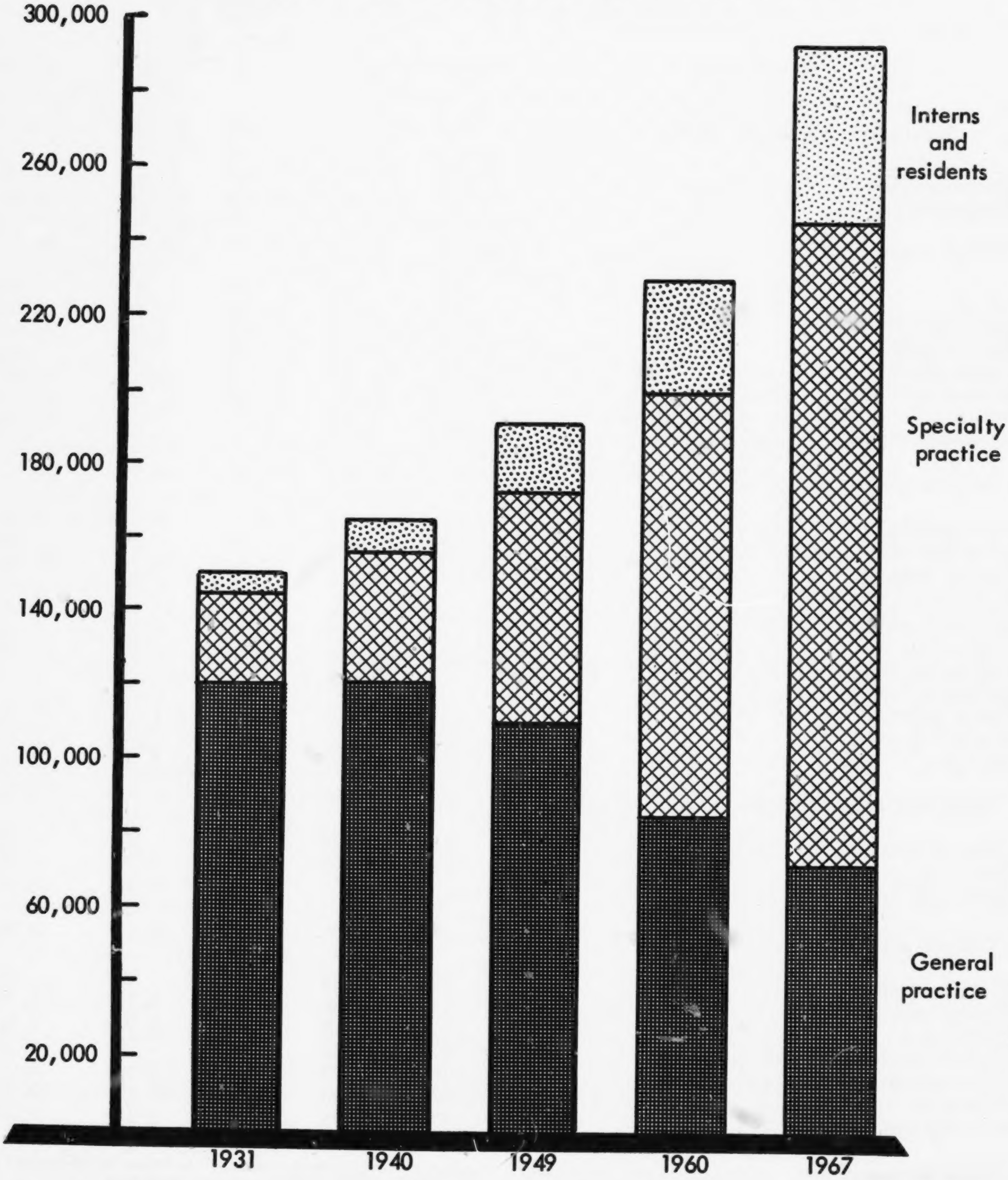


Table 42

The number of physicians in general practice declined 6 percent between 1963 and 1967, from 84,052 to 79,192. Almost every specialty showed an increase in the number of physicians limiting their practice to it in this period. Exceptions were pulmonary diseases, colon and rectal surgery, and occupational medicine which declined slightly.

Table 42

Number of active physicians (M.D.), by specialty: 1963–67

Specialty	Year [1]				
	1963	1964	1965	1966	1967
Total active physicians (M.D.) [2]	261,728	269,552	277,575	285,857	294,072
General practice [3]	84,052	82,685	81,116	80,351	79,192
All specialties	177,676	186,867	196,459	205,506	214,880
Medical specialties	56,593	59,712	62,791	65,591	68,927
Allergy	835	870	910	944	962
Cardiovascular disease	1,732	1,820	1,901	2,047	2,263
Dermatology	3,277	3,405	3,538	3,674	3,796
Gastroenterology	564	587	633	701	749
Internal medicine	34,742	36,792	38,690	40,314	42,325
Pediatrics [4]	14,207	15,018	15,893	16,680	17,614
Pulmonary diseases	1,236	1,220	1,226	1,231	1,218
Surgical specialties	78,135	81,440	84,791	88,355	91,822
Anesthesiology	7,639	8,173	8,644	9,110	9,630
Colon and rectal surgery	673	662	650	647	644
General surgery	25,493	26,527	27,693	28,756	29,687
Neurological surgery	1,822	1,937	2,045	2,189	2,315
Obstetrics and gynecology	15,720	16,306	16,833	17,444	17,964
Ophthalmology	7,849	8,108	8,397	8,735	9,083
Orthopedic surgery	6,820	7,200	7,549	7,982	8,426
Otolaryngology	5,185	5,243	5,325	5,429	5,583
Plastic surgery	993	1,058	1,133	1,207	1,303
Thoracic surgery	1,300	1,378	1,477	1,627	1,725
Urology	4,641	4,848	5,045	5,229	5,462
Psychiatry and neurology	18,383	19,610	20,879	22,128	23,295
Child psychiatry	532	694	817	958	1,080
Neurology	1,802	2,015	2,174	2,295	2,466
Psychiatry	16,049	16,901	17,888	18,875	19,749
Other specialties [5]	24,565	26,105	27,998	29,432	30,836
Aviation medicine	764	796	788	812	792
Occupational medicine	1,814	1,786	1,745	1,727	1,706
Pathology [6]	7,347	7,913	8,488	8,963	9,518
Physical medicine and rehabilitation	932	1,022	1,084	1,140	1,208
Preventive medicine and public health	2,610	2,675	2,680	2,684	2,634
Radiology [7]	8,751	9,138	9,647	10,189	10,877
All other specialties [8]	2,347	2,775	3,566	3,917	4,101

---

[1] As of Dec. 31st.

[2] Includes Federal physicians in the United States and abroad and active non-Federal physicians in 50 States, District of Columbia, Puerto Rico, American Samoa, Canal Zone, Guam, U.S. Pacific Islands, and Virgin Islands. Excludes non-Federal physicians with addresses temporarily unknown to the American Medical Association and those with temporary foreign addresses.

[3] Includes also physicians with no specialty reported.

[4] Includes also pediatric allergy and pediatric cardiology.

[5] The American Medical Association has eliminated the specialty "administrative medicine" and classified physicians in this field according to their secondary specialty.

[6] Includes also forensic pathology.

[7] Includes also diagnostic radiology and therapeutic radiology.

[8] Includes all specialties "not recognized" by the American Medical Association.

Source: Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968. Also previous annual publications

Table 43

In 1967 the American Medical Association changed the format of the material presented in its annual report on distribution of physicians in order to give a better picture of what physicians were actually doing and in order to resolve some confusion between activity and specialty. The principal changes were:

1. The activity categories "private practice" and "not in private practice" were replaced by more functional activity categories—"patient care" and "other professional activity". The former dichotomy of "private practice" and "not in private practice" was based primarily on financial arrangements. The new activity classification is based more on the functions performed than on the financial arrangements of medical practice. Under the old format, "not in private practice" had included: interns, residents, fellows, full-time hospitals staffs; physicians full-time on medical school faculties, in administration, in laboratory medicine, in preventive medicine, in research; and those not in practice and retired. All the remaining physicians were in "private practice." The change in format was made in recognition of the fact that some physicians "not in private practice" were providing patient care.

The new format places physicians whose activities are teaching, administration, or research in the category "other professional activity." The "patient care" category includes physicians in that activity who are self-employed, under retainers, or salaried. It is divided into two subcategories: (1) office based practice including solo, partnership, group practice, and physicians who are salaried or retained by other physicians or employed by non-Federal organizations other than hospitals; and (2) hospital based practice including interns, residents, and full-time hospital staffs.

2. The activity categories "laboratory medicine" and "preventive medicine" were eliminated and the physicians listed under these categories in the old format were reclassified into either "patient care" or "other professional activity" on the basis of activity and principal employer.

3. The specialty "administrative medicine" was eliminated and the physicians previously in this specialty were allocated according to their secondary specialty. This removed the confusion resulting previously from treating administration both as a specialty and as an activity.

The present table shows the number of active non-Federal physicians in each specialty and activity category under both the old and the new formats for the 1966 data. Summaries of the numbers of physicians in both formats were prepared by the American Medical Association for 1963, 1964, and 1965.

It will be seen from the table that all specialties gained numbers in the new format because of the reallocation among them of physicians in administrative medicine. Physicians in administrative medicine who had not supplied secondary specialties were shown as "unspecified" and in the present table are included with physicians in general practice.

Most of the pathologists who had previously been in laboratory medicine were placed in the category full-time hospital staff. For occupational medicine and preventive medicine and public health, physicians previously in the preventive medicine activity were classified in the "solo, partnership, group, or other practice" category.

Table 43—A comparison of changes in type of practice and specialty

Specialty	Activity category old format			
	Total active non-Federal physicians (M.D.)	Private practice	Full-time hospital staff	Other practice [1]
Total active physicians (M.D.)	[4] 259, 679	182, 502	13, 887	15, 403
General practice [6]	74, 881	63, 732	1, 790	838
All specialties	184, 799	118, 770	12, 097	14, 565
Medical specialties	57, 780	38, 213	3, 508	4, 727
Allergy	916	846	10	23
Cardiovascular disease	1, 849	1, 075	157	293
Dermatology	3, 359	2, 723	55	170
Gastroenterology	607	392	30	73
Internal medicine	34, 688	22, 929	1, 906	2, 811
Pediatrics [7]	15, 431	9, 888	988	1, 303
Pulmonary diseases	930	360	362	54
Surgical specialties	81, 217	61, 348	2, 863	2, 568
Anesthesiology	8, 571	6, 331	707	424
Colon & rectal surgery	639	616	6	....
General surgery	25, 880	17, 927	989	700
Neurological surgery	2, 011	1, 332	78	153
Obstetrics, gynecology	16, 344	12, 842	459	503
Ophthalmology	8, 223	6, 804	124	212
Orthopedic surgery	7, 159	5, 553	186	167
Otolaryngology	5, 028	4, 183	88	118
Plastic surgery	1, 140	903	26	31
Thoracic surgery	1, 436	1, 020	94	125
Urology	4, 786	3, 837	106	135
Psychiatry and neurology	19, 261	9, 867	3, 414	1, 598
Child psychiatry	890	393	134	90
Neurology	1, 939	838	168	404
Psychiatry	16, 432	8, 636	3, 112	1, 104
Other specialties	26, 541	9, 342	2, 312	5, 672
Administrative medicine	2, 622	....	....	2, 620
Aviation medicine	124	45	9	31
Occupational medicine	1, 531	391	11	41
Pathology [8]	7, 874	2, 104	664	1, 013
Physical medicine and rehabilitation	860	344	188	128
Preventive medicine and public health	1, 912	....	44	216
Radiology [9]	9, 229	5, 886	1, 228	502
All other specialties [10]	2, 389	572	168	1, 121

---

[1] Includes administration, medical school faculty, and research.

[2] Includes interns, residents, and fellows.

[3] Includes physicians who render patient care and who are salaried or retained by other physicians or employed by non-Federal organizations other than hospitals.

[4] This total is less than the sum of the column and of the row because it excludes one physician not classified because of an invalid code.

[5] Differs from corresponding column under old format because of allocation to another activity category of 2 physicians in training in administrative medicine.

due to new definitions, for active non-Federal physicians (M.D.): 1966

Activity category old format—Continued			Activity category new format				
				Patient care			Other practice[1]
Training[2]	Laboratory medicine	Preventive medicine	Total active non-Federal physicians (M.D.)	Solo, partnership, group, or other[3] practice	Hospital based		
					Full-time physician staff	Training[2]	
40,711	2,283	4,894	259,679	187,100	15,524	[5] 40,709	16,346
7,842	17	662	74,992	64,150	1,801	7,842	1,199
32,869	2,266	4,232	184,687	122,950	13,723	32,867	15,147
10,436	35	861	58,377	38,921	3,525	10,436	5,495
31	...	6	919	849	10	31	29
305	3	16	1,873	1,091	159	305	318
395	1	15	3,371	2,737	55	395	184
108	1	3	610	394	30	108	78
6,668	20	354	35,027	23,210	1,914	6,668	3,235
2,873	8	371	15,573	10,188	993	2,873	1,519
56	2	96	1,004	452	364	56	132
14,226	11	201	81,441	61,512	2,869	14,226	2,834
1,095	1	13	8,587	6,342	707	1,095	443
14	...	3	642	618	6	14	4
6,183	1	80	25,987	17,987	990	6,183	827
447	1	...	2,014	1,332	79	447	156
2,483	4	53	16,386	12,890	461	2,483	552
1,063	2	18	8,229	6,819	124	1,063	223
1,238	1	14	7,174	5,564	187	1,238	185
628	1	10	5,039	4,192	89	628	130
180	...	...	1,140	903	26	180	31
194	...	3	1,450	1,023	94	194	139
701	...	7	4,793	3,842	106	701	144
4,037	8	337	19,770	10,155	3,418	4,037	2,160
245	...	28	912	417	134	245	116
520	3	6	1,944	843	169	520	412
3,272	5	303	16,914	8,895	3,115	3,272	1,632
4,170	2,212	2,833	25,099	12,362	3,911	[5] 4,168	4,658
2	...	...	...	...	...	(5)	...
8	...	31	140	75	9	8	48
14	1	1,073	1,616	1,440	11	14	151
1,933	2,132	28	7,896	2,495	2,226	1,933	1,242
178	1	21	873	361	188	178	146
57	5	1,590	2,193	1,459	44	57	633
1,570	28	15	9,241	5,906	1,247	1,570	518
408	45	75	3,140	626	186	408	1,920

---

[6] Includes also physicians with no specialty reported.
[7] Includes also pediatric allergy and pediatric cardiology.
[8] Includes also forensic pathology.
[9] Includes also diagnostic radiology and therapeutic radiology.
[10] Includes all specialties "not recognized" by the American Medical Association.

Source: Theodore, C. N.; Sutter, G. E.; and Jokiel, E. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1966. Chicago, American Medical Association, 1967.

Table 44

Of the 294,100 active physicians (M.D.) in the United States at the end of 1967, all except 79,200 were limiting their practice to a specialty. About 91,800 were engaged in practice of a surgical specialty, 68,900 in a medical specialty, 23,300 in psychiatry and neurology, and the rest were divided among six miscellaneous specialties and specialties "not recognized" by the American Medical Association.

Practically all of the 10,100 osteopathic physicians in private practice were in general practice. About 800 were engaged in surgical specialties and some 350 in medical specialties.

Table 44

Number of active physicians, by specialty and type of practice: December 31, 1967

Specialty	Number of active physicians (M.D.)					Number of D.O.'s in private practice [3]
		Patient care			Other professional activity [2]	
			Hospital based			
	Total	Solo, partnership, group or other [1] practice	Training programs	Full-time staff		
Total active physicians (M.D.)	[4] 294,072	190,079	46,856	37,255	19,882	10,067
General practice [5]	79,192	62,844	8,326	6,655	1,367	[6] 8,651
All specialties	214,880	127,235	38,530	30,600	18,515	1,416
Medical specialties	68,927	40,113	12,498	9,571	6,745	354
Allergy	962	872	26	34	30	2
Cardiovascular disease	2,263	1,162	421	324	356	2
Dermatology	3,796	2,807	510	260	219	20
Gastroenterology	749	408	135	106	100	....
Internal medicine	42,325	23,952	8,055	6,205	4,113	266
Pediatrics [7]	17,614	10,466	3,281	2,118	1,749	64
Pulmonary diseases	1,218	446	70	524	178	....
Surgical specialties	91,822	63,317	16,409	8,764	3,332	841
Anesthesiology	9,630	6,681	1,296	1,164	489	180
Colon and rectal surgery	644	610	17	12	5	43
General surgery	29,687	18,365	6,989	3,309	1,024	273
Neurological surgery	2,315	1,390	502	243	180	5
Obstetrics and gynecology	17,964	13,125	2,667	1,499	673	80
Ophthalmology	9,083	7,048	1,247	540	248	[8] 133
Orthopedic surgery	8,426	5,853	1,557	807	209	73
Otolaryngology	5,583	4,239	807	382	155	23
Plastic surgery	1,303	948	220	98	37	1
Thoracic surgery	1,725	1,093	228	254	150	5
Urology	5,462	3,965	879	456	162	25
Psychiatry and neurology	23,295	10,809	4,491	5,432	2,563	31
Child psychiatry	1,080	475	255	201	149	....
Neurology	2,466	912	611	444	499	3
Psychiatry	19,749	9,422	3,625	4,787	1,915	28

Table 44—Continued

Number of active physicians, by specialty and type of practice: December 31, 1967—Continued

Specialty	Number of active physicians (M.D.)					Number of D.O.'s in private practice[3]
	Total	Patient care			Other professional activity[2]	
		Solo, partnership, group or other[1] practice	Hospital based			
			Training programs	Full-time staff		
Other specialties	30,836	12,996	5,132	6,833	5,875	190
Aviation medicine	792	87	64	459	182	....
Occupational medicine	1,706	1,416	17	100	173	3
Pathology[9]	9,518	2,783	2,222	3,086	1,427	46
Physical medicine and rehabilitation	1,208	386	234	413	175	9
Preventive medicine and public health	2,634	1,379	112	329	814	....
Radiology[10]	10,877	6,246	2,023	2,021	587	132
All other specialties[11]	4,101	699	460	425	2,517	....

---

[1] Includes physicians who render patient care and who are salaried or retained by other physicians or employed by non-Federal organizations other than hospitals.

[2] Includes medical school faculty, administration, and research.

[3] Data on specialty not available for 775 D.O.'s in training programs, 181 in full-time hospital positions, 186 in other professional activities, and 172 in Federal service.

[4] Includes Federal physicians in the U.S. and abroad and active non-Federal physicians in 50 States, District of Columbia, Puerto Rico, and other outlying areas. Excludes non-Federal physicians with addresses unknown to the American Medical Association and those with temporary foreign addresses.

[5] Includes also physicians with no specialty.

[6] Includes also 827 physicians with practice limited to manipulative therapy.

[7] Includes also pediatric allergy and pediatric cardiology.

[8] Includes combinations of ophthalmology and otolaryngology, and ophthalmology and otorhinolaryngology.

[9] Includes also forensic pathology.

[10] Includes also diagnostic radiology and therapeutic radiology.

[11] Includes all specialties "not recognized" by the American Medical Association.

Source: U.S. Department of Health, Education, And Welfare; Public Health Service; National Center for Health Statistics: "Health Resources Statistics, 1968"; Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 45

The 1967 data shown in the preceding tables have included Federal physicians (M.D.) in the United States and abroad and non-Federal physicians (M.D.) in 50 States, the District of Columbia, Puerto Rico, U.S. outlying areas (American Samoa, Canal Zone, Guam, U.S. Pacific Islands, and the Virgin Islands), and physicians with addresses temporarily unknown to the American Medical Association. The data for physicians (D.O.) have included Federal physicians (D.O.) and non-Federal physicians (D.O.) in 50 States and the District of Columbia.

State tables which follow include a total "all locations" and a total "United States." The latter includes physicians in the 50 States and the District of Columbia. The "all locations" total includes, in addition, physicians (M.D.) in Puerto Rico and outlying areas but excludes those with addresses unknown.

The present table summarizes the various figures for M.D.'s and D.O.'s, Federal and non-Federal, total and active, in the different geographic areas.

Table 45

Number of physicians, by activity status and location: 1967

Activity status and location	Number of physicians December 31, 1967		
	Total	M.D.	D.O.
Total	322,045	308,630	13,415
Federal	27,724	27,552	172
Non-Federal	294,321	281,078	13,243
Active	277,729	266,520	11,209
Inactive	14,932	12,898	[1] 2,034
Address unknown	1,660	1,660	...
Non-Federal:			
All locations [2]	292,661	279,418	13,243
50 States, District of Columbia	290,420	277,177	13,243
Puerto Rico	2,038	2,038	...
Outlying areas	203	203	...
Active non-Federal:			
All locations [2]	277,729	266,520	11,209
50 States, District of Columbia	275,537	264,328	11,209
Puerto Rico	2,000	2,000	...
Outlying areas	192	192	...

[1] Includes 734 physicians with status not reported.

[2] Includes 50 States, the District of Columbia, Puerto Rico, and outlying areas.

Source: Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968.

American Osteopathic Association, Membership and Statistics Department. A Statistical Study of the Osteopathic Profession Dec. 31, 1967. Chicago, The Association, June 1968.

Tables 46 and 47 and Figure 7

The number of active non-Federal physicians (M.D. and D.O.) in relation to the civilian population in the United States was 141 in 1967. The State ratios varied from a high of 219 in New York to a low of 71 in Alaska and 73 in Mississippi. The ratio for Alaska understates the relation between physicians and population because Eskimos and Indians received services from Federal physicians. The physician/population ratios for States with large numbers of Indians under Federal jurisdiction and for States with numerous dependents of members of the Armed Forces also understate the relative availability of physicians to civilians.

In general the States with ratios of less than 100 physicians per 100,000 civilian population are located in the South, the North-Central, and Mountain sections of the United States. The States with ratios of 140 and over are in the northeast.

Table 46

Number of non-Federal physicians (M.D. and D.O.) and physician/population ratios in each State: 1967

Geographic division and State	Number of non-Federal physicians (M.D. and D.O.) 12-31-67		Civilian population 7-1-67 [1] (thousands)	Rate per 100,000 civilian population	
	Total	Active		Total	Active
All locations [2]	292, 661	277, 729	198, 649	147	[3] 140
United States	290, 420	275, 537	195, 669	148	141
New England	21, 042	19, 925	11, 232	187	177
Connecticut	5, 422	5, 182	2, 904	187	178
Maine	1, 238	1, 122	969	128	116
Massachusetts	11, 195	10, 686	5, 377	208	199
New Hampshire	964	865	687	140	126
Rhode Island	1, 433	1, 362	879	163	155
Vermont	790	708	417	189	170
Middle Atlantic	69, 415	66, 855	36, 536	190	183
New Jersey	10, 041	9, 610	6, 912	145	139
New York	40, 646	39, 305	17, 971	226	219
Pennsylvania	18, 728	17, 940	11, 653	161	154
South Atlantic	38, 461	35, 572	28, 997	133	123
Delaware	727	697	515	141	135
District of Columbia	3, 023	2, 903	789	383	368
Florida	9, 447	7, 823	5, 945	159	132
Georgia	4, 558	4, 380	4, 408	103	99
Maryland	6, 374	6, 108	3, 608	177	169
North Carolina	5, 168	4, 958	4, 962	104	100
South Carolina	2, 111	2, 004	2, 590	82	77
Virginia	5, 183	4, 916	4, 369	119	113
West Virginia	1, 870	1, 783	1, 811	103	98

Table 46—Continued

Number of non-Federal physicians (M.D. and D.O.) and physician/population ratios in each State: 1967—Continued

Geographic division and State	Number of non-Federal physicians (M.D. and D.O.) 12-31-67		Civilian population 7-1-67 [1] (thousands)	Rate per 100,000 civilian population	
	Total	Active		Total	Active
East South Central	12, 304	11, 825	12, 885	95	92
Alabama	2, 871	2, 768	3, 507	82	79
Kentucky	3, 168	3, 040	3, 154	100	96
Mississippi	1, 768	1, 688	2, 317	76	73
Tennessee	4, 497	4, 329	3, 907	115	111
West South Central	21, 280	20, 300	18, 723	114	108
Arkansas	1, 710	1, 600	1, 985	86	81
Louisiana	4, 095	3, 952	3, 628	113	109
Oklahoma	2, 904	2, 748	2, 467	118	111
Texas	12, 571	12, 000	10, 643	118	113
East North Central	52, 775	50, 721	39, 085	135	130
Illinois	14, 996	14, 415	10, 815	139	133
Indiana	5, 158	4, 952	5, 010	103	99
Michigan	12, 643	12, 120	8, 595	147	141
Ohio	14, 760	14, 240	10, 476	141	136
Wisconsin	5, 218	4, 994	4, 188	125	119
West North Central	21, 101	20, 037	15, 886	133	126
Iowa	3, 298	3, 120	2, 750	120	113
Kansas	2, 680	2, 548	2, 257	119	113
Minnesota	5, 414	5, 186	3, 620	150	143
Missouri	6, 832	6, 454	4, 550	150	142
Nebraska	1, 717	1, 628	1, 429	120	114
North Dakota	585	563	618	95	91
South Dakota	575	538	662	87	81
Mountain	10, 648	9, 931	7, 736	138	128
Arizona	2, 347	2, 087	1, 615	145	129
Colorado	3, 685	3, 492	1, 972	187	177
Idaho	676	634	699	97	91
Montana	726	684	688	106	99
Nevada	477	446	433	110	103
New Mexico	1, 050	970	996	105	97
Utah	1, 365	1, 316	1, 017	134	129
Wyoming	322	302	316	102	96

Table 46—Continued

Number of non-Federal physicians (M.D. and D.O.) and physicians/population ratios in each State: 1967—Continued

Geographic division and State	Number of non-Federal physicians (M.D. and D.O.) 12-31-67		Civilian population 7-1-67 [1] (thousands)	Rate per 100,000 civilian population	
	Total	Active		Total	Active
Pacific	43, 394	40, 371	24, 590	176	164
Alaska	177	170	238	74	71
California	34, 555	32, 074	18, 520	187	173
Hawaii	1, 002	950	705	142	135
Oregon	2, 935	2, 742	1, 975	149	139
Washington	4, 725	4, 435	3, 152	150	141
Puerto Rico	2, 038	2, 000	2, 684	76	75
Outlying areas	203	192	296	69	65

[1] State figures may not add to totals because of rounding. Previously published population figures for divisions and States were based on earlier estimates of the Bureau of the Census.

[2] Includes the United States, Puerto Rico, and outlying areas.

[3] Ratio differs from corresponding figure in table 32 (139) because population used in that table is as of Dec. 31, 1967 (not available by State).

Source: Computed from data in:

Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968.

American Osteopathic Association, Membership and Statistics Department. A Statistical Survey of the Osteopathic Profession Dec. 31, 1967. Chicago, The Association, June 1968.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 403.

Table 47

Number of non-Federal physicians (M.D.) and non-Federal physicians (D.O.) and physician/population ratios in each State: 1967

Geographic division and State	Number of non-Federal physicians 12–31–67				Civilian population 7–1–67 [1] (thousands)	Rate per 100,000 civilian population [2]			
	Total		Active			Total		Active	
	M.D.	D.O.	M.D.	D.O.		M.D.	D.O.	M.D.	D.O.
All locations [3]	279, 418	13, 243	266, 520	11, 209	198, 649	141	7	134	6
United States	277, 177	13, 243	264, 328	11, 209	195, 669	142	7	135	6
New England	20, 343	699	19, 415	510	11, 232	181	6	173	5
Connecticut	5, 367	55	5, 141	41	2, 904	185	2	177	1
Maine	1, 031	207	955	167	969	106	21	99	17
Massachusetts	10, 913	282	10, 504	182	5, 377	203	5	195	3
New Hampshire	938	26	849	16	687	137	4	124	2
Rhode Island	1, 349	84	1, 289	73	879	153	10	147	8
Vermont	745	45	677	31	417	179	11	162	7
Middle Atlantic	66, 643	2, 772	64, 450	2, 405	36, 536	182	8	176	7
New Jersey	9, 398	643	9, 061	549	6, 912	136	9	131	8
New York	40, 082	564	38, 829	476	17, 971	223	3	216	3
Pennsylvania	17, 163	1, 565	16, 560	1, 380	11, 653	147	13	142	12
South Atlantic	37, 507	954	34, 823	749	28, 997	129	3	120	3
Delaware	686	41	659	38	515	133	8	128	7
District of Columbia	3, 007	16	2, 890	13	789	381	2	366	2
Florida	8, 841	606	7, 360	463	5, 945	149	10	124	8
Georgia	4, 478	80	4, 314	66	4, 408	102	2	98	1
Maryland	6, 351	23	6, 093	15	3, 608	176	1	169	(4)
North Carolina	5, 136	32	4, 937	21	4, 962	104	1	99	(4)
South Carolina	2, 105	6	2, 000	4	2, 590	81	(4)	77	(4)
Virginia	5, 147	36	4, 887	29	4, 369	118	1	112	1
West Virginia	1, 756	114	1, 683	100	1, 811	97	6	93	6
East South Central	12, 194	110	11, 741	84	12, 885	95	1	91	1
Alabama	2, 867	4	2, 766	2	3, 507	82	(4)	79	(4)
Kentucky	3, 129	39	3, 010	30	3, 154	99	1	95	1
Mississippi	1, 767	1	1, 687	1	2, 317	76	(4)	73	(4)
Tennessee	4, 431	66	4, 278	51	3, 907	113	2	109	1
West South Central	20, 014	1, 266	19, 170	1, 130	18, 723	107	7	102	6
Arkansas	1, 688	22	1, 585	15	1, 985	85	1	80	1
Louisiana	4, 083	12	3, 941	11	3, 628	113	(4)	109	(4)
Oklahoma	2, 483	421	2, 365	383	2, 467	101	17	96	16
Texas	11, 760	811	11, 279	721	10, 643	110	8	106	7

Table 47—Continued

Number of non-Federal physicians (M.D.) and non-Federal physicians (D.O.) and physician/population ratios in each State: 1967—Continued

Geographic division and State	Number of non-Federal physicians 12-31-67				Civilian population 7-1-67 [1] (thousands)	Rate per 100,000 civilian population [2]			
	Total		Active			Total		Active	
	M.D.	D.O.	M.D.	D.O.		M.D.	D.O.	M.D.	D.O.
East North Central........	48, 872	3, 903	47, 180	3, 541	39, 085	125	10	121	9
Illinois.................	14, 652	344	14, 155	260	10, 815	135	3	131	2
Indiana..................	4, 960	198	4, 778	174	5, 010	99	4	95	3
Michigan.................	10, 541	2, 102	10, 180	1, 940	8, 595	123	24	118	23
Ohio.....................	13, 682	1, 078	13, 234	1, 006	10, 476	131	10	126	10
Wisconsin................	5, 037	181	4, 833	161	4, 188	120	4	115	4
West North Central.......	19, 183	1, 918	18, 400	1, 637	15, 886	121	12	116	10
Iowa.....................	2, 889	409	2, 763	357	2, 750	105	15	100	13
Kansas...................	2, 483	197	2, 383	165	2, 257	110	9	106	7
Minnesota................	5, 351	63	5, 136	50	3, 620	148	2	142	1
Missouri.................	5, 677	1, 155	5, 461	993	4, 550	125	25	120	22
Nebraska.................	1, 670	47	1, 596	32	1, 429	117	3	112	2
North Dakota.............	575	10	554	9	618	93	2	90	1
South Dakota.............	538	37	507	31	662	81	6	77	5
Mountain.................	9, 850	798	9, 242	689	7, 736	127	10	119	9
Arizona..................	2, 068	279	1, 841	246	1, 615	128	17	114	15
Colorado.................	3, 425	260	3, 258	234	1, 972	174	13	165	12
Idaho....................	639	37	610	24	699	91	5	87	3
Montana..................	686	40	656	28	688	100	6	95	4
Nevada...................	449	28	423	23	433	104	6	98	5
New Mexico...............	928	122	863	107	996	93	12	87	11
Utah.....................	1, 346	19	1, 298	18	1, 017	132	2	128	2
Wyoming..................	309	13	293	9	316	98	4	93	3
Pacific..................	42, 571	823	39, 907	464	24, 590	173	3	162	2
Alaska...................	173	4	168	2	238	73	2	71	1
California...............	34, 135	420	31, 928	146	18, 520	184	2	172	1
Hawaii...................	982	20	935	15	705	139	3	133	2
Oregon...................	2, 766	169	2, 605	137	1, 975	140	9	132	7
Washington...............	4, 515	210	4, 271	164	3, 152	143	7	136	5
Puerto Rico..............	2, 038	....	2, 000	....	2, 684	76	......	75	......
Outlying areas...........	203	....	192	....	296	69	......	65	......

---

[1] State figures may not add to totals because of rounding. Previously published population figures for divisions and States were based on earlier estimates of the Bureau of the Census.

[2] Sums of rates for M.D. and D.O. may differ from corresponding rates in table 46 because of rounding.

[3] Includes the United States, Puerto Rico, and outlying areas.

[4] Less than 0.5.

Source: Computed from data in:

Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968.

American Osteopathic Association, Membership and Statistics Department. A Statistical Survey of the Osteopathic Profession Dec. 31, 1967. Chicago, The Association, June 1968.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 403.

FIGURE 7.—Active non-Federal physicians in relation to population in each State: 1967.

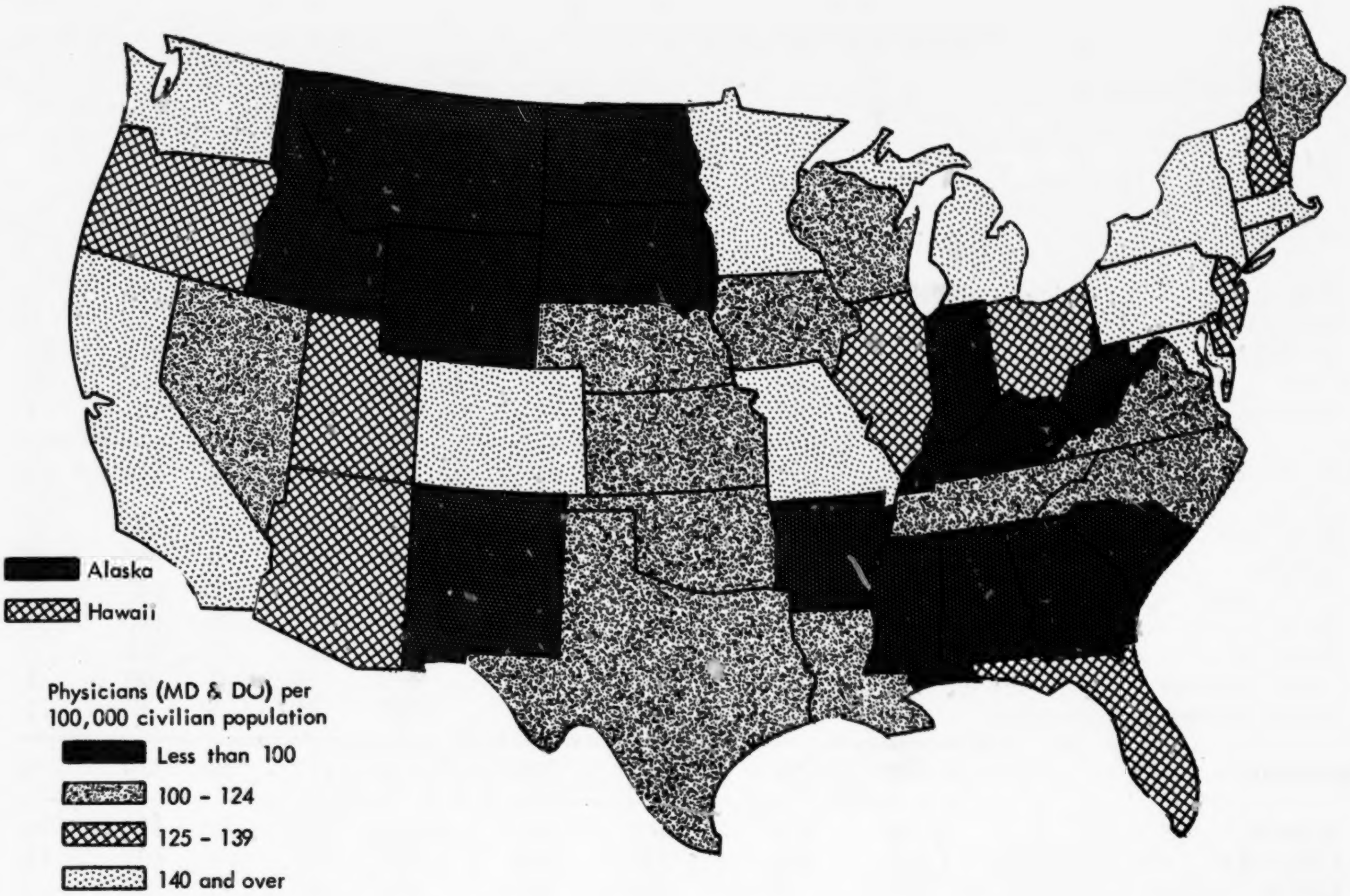

Alaska
Hawaii
Physicians (MD & DO) per 100,000 civilian population
Less than 100
100 - 124
125 - 139
140 and over

Table 48

In relation to the civilian population, the number of non-Federal physicians providing patient care in 1967 was 132 per 100,000 population. Among the States, New York had the highest ratio, 199, and Massachusetts the next highest, 181. Alaska and Mississippi each had the lowest ratios, 69. See p. 51 for a discussion of some of the limitations of these ratios as measures of physicians available to the civilian population.

Table 48

Number of non-Federal physicians providing patient care and physician/population ratios in each State: 1967

Geographic division and State	Number of physicians providing patient care [1] 12-31-67 Total	M.D.	D.O.	Civilian population 7-1-67 [2] (thousands)	Total non-Federal physicians providing patient care per 100,000 civilian population
All locations [3]	[4] 260,296	249,273	[4] 11,023	198,649	[5] 131
United States	[4] 258,279	247,256	[4] 11,023	195,669	132
New England	18,391	17,896	495	11,232	164
Connecticut	4,776	4,735	41	2,904	164
Maine	1,091	935	156	969	114
Massachusetts	9,763	9,584	179	5,377	181
New Hampshire	813	797	16	687	119
Rhode Island	1,327	1,255	72	879	152
Vermont	621	590	31	417	149
Middle Atlantic	62,339	60,112	2,227	36,536	171
New Jersey	9,211	8,688	523	6,912	133
New York	36,500	36,044	456	17,971	199
Pennsylvania	16,628	15,380	1,248	11,653	143
South Atlantic	32,891	32,168	723	28,997	113
Delaware	671	635	36	515	130
District of Columbia	2,521	2,509	12	789	318
Florida	7,450	7,006	444	5,945	126
Georgia	4,097	4,034	63	4,408	93
Maryland	5,481	5,466	15	3,608	152
North Carolina	4,505	4,484	21	4,962	92
South Carolina	1,910	1,906	4	2,590	76
Virginia	4,566	4,538	28	4,369	105
West Virginia	1,690	1,590	100	1,811	94
East South Central	11,047	10,963	84	12,885	86
Alabama	2,621	2,619	2	3,507	75
Kentucky	2,825	2,795	30	3,154	90
Mississippi	1,604	1,603	1	2,317	69
Tennessee	3,997	3,946	51	3,907	104
West South Central	19,170	18,093	1,077	18,723	102
Arkansas	1,520	1,505	15	1,985	78
Louisiana	3,715	3,704	11	3,628	103
Oklahoma	2,593	2,240	353	2,467	106
Texas	11,342	10,644	698	10,643	106

Table 48—Continued

Number of non-Federal physicians providing patient care and physician/population ratios in each State: 1967—Continued

Geographic division and State	Number of physicians providing patient care [1] 12-31-67			Civilian population 7-1-67[2] (thousands)	Total non-Federal physicians providing patient care per 100,000 civilian population
	Total	M.D.	D.O.		
East North Central	47, 564	44, 497	3, 067	39, 085	122
Illinois	13, 534	13, 313	221	10, 815	125
Indiana	4, 686	4, 516	170	5, 010	94
Michigan	11, 232	9, 590	1, 642	8, 595	131
Ohio	13, 415	12, 539	876	10, 476	129
Wisconsin	4, 697	4, 539	158	4, 188	112
West North Central	18, 606	17, 143	1, 463	15, 886	117
Iowa	2, 896	2, 566	330	2, 750	105
Kansas	2, 388	2, 228	160	2, 257	106
Minnesota	4, 851	4, 802	49	3, 620	136
Missouri	5, 883	5, 030	853	4, 550	129
Nebraska	1, 511	1, 479	32	1, 429	106
North Dakota	544	535	9	618	87
South Dakota	533	503	30	662	80
Mountain	9, 386	8, 725	661	7, 736	121
Arizona	2, 020	1, 790	230	1, 615	126
Colorado	3, 237	3, 013	224	1, 972	168
Idaho	622	598	24	699	89
Montana	673	645	28	688	97
Nevada	437	415	22	433	100
New Mexico	895	788	107	996	91
Utah	1, 205	1, 188	17	1, 017	118
Wyoming	297	288	9	316	95
Pacific	38, 110	37, 659	451	24, 590	155
Alaska	164	162	2	238	69
California	30, 345	30, 204	141	18, 520	161
Hawaii	913	898	15	705	133
Oregon	2, 555	2, 422	133	1, 975	128
Washington	4, 133	3, 973	160	3, 152	136
Puerto Rico	1, 836	1, 836	....	2, 684	68
Outlying areas	181	181	....	296	61

---

[1] Includes M.D.'s in solo, partnership, group, and other practice; those in training programs; and full-time hospital staffs. Includes D.O.'s in private practice and those in training programs and full-time hospital staffs.

[2] State figures may not add to totals because of rounding. Previously published population figures for divisions and States were based on earlier estimates of the Bureau of the Census.

[3] Includes the United States, Puerto Rico, and outlying areas.

[4] Includes 775 D.O.'s in training programs for whom distribution by State is not available.

[5] Ratio differs from corresponding figure in table 38 (130) because population used in that table is as of Dec. 31, 1967 (not available by State).

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 403.

Table 49

The number of non-Federal physicians providing patient care in each State in 1967 is shown in the table for each type of practice. The figures shown here for interns and residents (M.D.) differ from those shown in table 28 for several reasons. The data in the two tables are for different dates in 1967. Table 28 includes Federal interns and residents while table 49 includes only non-Federal interns and residents. Table 28 included persons in approved positions only and the present table includes some in unapproved positions.

Table 49

Number of non-Federal physicians providing patient care, by type of practice in each State: 1967

Geographic division and State	Number of M.D.'s [1]					Number of D.O.'s [1]		
			Hospital based practice					
	Total	Solo, partnership, group or other [2] practice	Interns	Residents and fellows	Full-time staff	Total	Private practice	Hospital staff
All locations [3]	249, 273	190, 079	9, 868	32, 722	16, 604	[4] 11, 023	10, 067	181
United States	247, 256	188, 772	9, 813	32, 517	16, 154	[4] 11, 023	10, 067	181
New England	17, 896	12, 785	702	2, 740	1, 669	495	487	8
Connecticut	4, 735	3, 468	215	652	400	41	41	....
Maine	935	817	12	29	77	156	151	5
Massachusetts	9, 584	6, 422	377	1, 798	987	179	178	1
New Hampshire	797	686	19	51	41	16	16	....
Rhode Island	1, 255	964	51	116	124	72	70	2
Vermont	590	428	28	94	40	31	31	....
Middle Atlantic	60, 112	42, 801	2, 811	9, 369	5, 131	2, 227	2, 190	37
New Jersey	8, 688	7, 027	364	691	606	523	514	9
New York	36, 044	24, 471	1, 706	6, 453	3, 414	456	455	1
Pennsylvania	15, 380	11, 303	741	2, 225	1, 111	1, 248	1, 221	27
South Atlantic	32, 168	24, 241	1, 263	4, 538	2, 126	723	715	8
Delaware	635	496	11	54	74	36	36	....
District of Columbia	2, 509	1, 524	159	602	224	12	12	....
Florida	7, 006	5, 641	219	738	408	444	437	7
Georgia	4, 034	3, 165	176	502	191	63	63	....
Maryland	5, 466	3, 433	303	1, 181	549	15	15	....
North Carolina	4, 484	3, 489	149	632	214	21	21	....
South Carolina	1, 906	1, 640	48	144	74	4	4	....
Virginia	4, 538	3, 564	159	543	272	28	28	....
West Virginia	1, 590	1, 289	39	142	120	100	99	1
East South Central	10, 963	8, 900	391	1, 164	508	84	84	....
Alabama	2, 619	2, 217	91	218	93	2	2	....
Kentucky	2, 795	2, 277	78	279	161	30	30	....
Mississippi	1, 603	1, 410	20	116	57	1	1	....
Tennessee	3, 946	2, 996	202	551	197	51	51	....

Table 49—Continued

Number of non-Federal physicians providing patient care, by type of practice in each State: 1967—Con.

Geographic division and State	Number of M.D.'s [1]					Number of D.O.'s [1]		
			Hospital based practice					
	Total	Solo, partnership, group or other [2] practice	Interns	Residents and fellows	Full-time staff	Total	Private practice	Hospital staff
West South Central	18,093	14,915	575	1,886	717	1,077	1,067	10
Arkansas	1,505	1,306	30	112	57	15	15	....
Louisiana	3,704	2,859	173	499	173	11	11	....
Oklahoma	2,240	1,890	68	207	75	353	352	1
Texas	10,644	8,860	304	1,068	412	698	689	9
East North Central	44,497	33,502	1,948	6,205	2,842	3,067	2,984	83
Illinois	13,313	10,004	674	1,731	904	221	212	9
Indiana	4,516	3,916	113	292	195	170	166	4
Michigan	9,590	6,726	392	1,722	750	1,642	1,590	52
Ohio	12,539	9,200	610	1,965	764	876	862	14
Wisconsin	4,539	3,656	159	495	229	158	154	4
West North Central	17,143	12,991	582	2,604	966	1,463	1,435	28
Iowa	2,566	2,078	77	304	107	330	326	4
Kansas	2,228	1,744	50	286	148	160	160	....
Minnesota	4,802	3,369	165	996	272	49	49	....
Missouri	5,030	3,584	221	883	342	853	829	24
Nebraska	1,479	1,254	56	115	54	32	32	....
North Dakota	535	495	1	11	28	9	9	....
South Dakota	503	467	12	9	15	30	30	....
Mountain	8,725	7,290	320	773	342	661	654	7
Arizona	1,790	1,528	81	115	66	230	225	5
Colorado	3,013	2,258	154	459	142	224	222	2
Idaho	598	580	....	....	18	24	24	....
Montana	645	628	....	....	17	28	28	....
Nevada	415	392	....	....	23	22	22	....
New Mexico	788	690	21	46	31	107	107	....
Utah	1,188	935	64	153	36	17	17	....
Wyoming	288	279	....	....	9	9	9	....
Pacific	37,659	31,347	1,221	3,238	1,853	451	451	....
Alaska	162	154	....	....	8	2	2	....
California	30,204	25,120	984	2,579	1,521	141	141	....
Hawaii	898	751	34	61	52	15	15	....
Oregon	2,422	2,041	79	219	83	133	133	....
Washington	3,973	3,281	124	379	189	160	160	....
Puerto Rico	1,836	1,247	39	185	365	....	....	....
Outlying areas	181	60	16	20	85	....	....	....

---

[1] As of Dec. 31st.

[2] Includes physicians who render patient care and who are salaried or retained by other physicians or employed by non-Federal organizations other than hospitals.

[3] Includes the United States, Puerto Rico, and outlying areas.

[4] Includes 775 D.O.'s in training programs for whom distribution by State is not available.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Tables 50 and 51

The number of active non-Federal physicians (M.D.) in selected specialties in each State is shown in table 50 and the ratios to population are shown in table 51.

In the United States there were, in 1967, 37 non-Federal physicians in general practice for every 100,000 civilians. This rate varied from 24 in New Mexico to 47 in California. The rates for physicians in the medical specialties varied from nine per 100,000 in South Dakota to 58 in New York compared with an average of 31 in the United States. For surgical specialties the United Stares ratio was 43 per 100,000 population but sevetal States had ratios of only 21 while New York had 66. The United States rate for physicians specializing in psychiatry and neurology was 11 but 12 States had rates of less than five while New York had 25 per 100,000 population.

Table 50

Number of active non-Federal physicians (M.D.) in selected specialties in each State: 1967

Geographic division and State	Active non-Federal physicians (M.D.) December 31, 1967											
	Total	General practice [1]	Medical specialties				Surgical specialties				Psychiatry and neurology [5]	All others [6]
			Total	Internal medicine	Pediatrics [2]	Other [3]	Total	General surgery	Obstetrics, gynecology	Other [4]		
All locations [7]	266, 520	73, 703	61, 115	36, 577	16, 394	8, 144	84, 374	26, 752	16, 778	40, 844	20, 882	26, 446
United States	264, 328	73, 003	60, 581	36, 310	16, 198	8, 073	83, 748	26, 572	16, 589	40, 587	20, 760	26, 236
New England	19, 415	4, 494	4, 894	2, 991	1, 212	691	5, 955	2, 056	1, 037	2, 862	2, 000	2, 072
Connecticut	5, 141	1, 053	1, 349	807	354	188	1, 598	488	339	771	551	590
Maine	955	346	168	99	44	25	312	110	49	153	41	88
Massachusetts	10, 504	2, 282	2, 774	1, 718	652	404	3, 150	1, 158	502	1, 490	1, 198	1, 100
New Hampshire	849	292	143	93	34	16	263	90	37	136	56	95
Rhode Island	1, 289	330	310	173	92	45	444	153	76	215	99	106
Vermont	677	191	150	101	36	13	188	57	34	97	55	93
Middle Atlantic	64, 450	15, 816	16, 137	9, 787	4, 108	2, 242	19, 717	6, 303	4, 214	9, 200	6, 380	6, 400
New Jersey	9, 061	2, 631	2, 188	1, 261	571	356	2, 899	885	661	1, 353	558	785
New York	38, 829	8, 251	10, 491	6, 433	2, 726	1, 332	11, 800	3, 887	2, 488	5, 425	4, 502	3, 785
Pennsylvania	16, 560	4, 934	3, 458	2, 093	811	554	5, 018	1, 531	1, 065	2, 422	1, 320	1, 830
South Atlantic	34, 823	8, 618	8, 465	5, 022	2, 451	992	11, 679	3, 825	2, 510	5, 344	2, 574	3, 487
Delaware	659	162	157	84	49	24	206	69	48	89	56	78
District of Columbia	2, 890	381	914	593	207	114	916	288	211	417	360	319
Florida	7, 360	1, 753	1, 797	1, 056	491	250	2, 680	805	530	1, 345	426	704
Georgia	4, 314	1, 139	1, 008	591	298	119	1, 493	499	339	655	265	409
Maryland	6, 093	1, 192	1, 643	965	533	145	1, 982	627	517	838	655	621
North Carolina	4, 937	1, 296	1, 162	674	340	148	1, 563	542	339	682	364	552
South Carolina	2, 000	772	311	169	107	35	666	223	132	311	98	153
Virginia	4, 887	1, 360	1, 152	682	346	124	1, 584	518	313	753	298	493
West Virginia	1, 683	563	321	208	80	33	589	254	81	254	52	158

East South Central	11, 741	3, 838	2, 360	1, 308	757	295	3, 914	1, 424	714	1, 776	469	1, 160
Alabama	2, 766	938	585	322	193	70	895	308	185	402	93	255
Kentucky	3, 010	1, 036	590	331	174	85	961	362	156	443	140	283
Mississippi	1, 687	712	259	135	83	41	517	196	101	220	55	144
Tennessee	4, 278	1, 152	926	520	307	99	1, 541	558	272	711	181	478
West South Central	19, 170	6, 167	3, 855	2, 114	1, 170	571	6, 319	1, 791	1, 264	3, 264	1, 067	1, 762
Arkansas	1, 585	694	244	125	78	41	430	136	85	209	90	127
Louisiana	3, 941	1, 114	813	441	274	98	1, 418	401	307	710	247	349
Oklahoma	2, 365	844	465	273	120	72	741	214	133	394	124	191
Texas	11, 279	3, 515	2, 333	1, 275	698	360	3, 730	1, 040	739	1, 951	606	1, 095
East North Central	47, 180	14, 322	10, 141	6, 150	2, 593	1, 398	14, 731	4, 869	2, 965	6, 897	3, 190	4, 796
Illinois	14, 155	4, 409	3, 119	1, 867	833	419	4, 190	1, 366	878	1, 946	968	1, 469
Indiana	4, 778	1, 890	748	449	184	115	1, 473	443	226	804	221	446
Michigan	10, 180	2, 609	2, 275	1, 388	564	323	3, 316	1, 140	755	1, 421	860	1, 120
Ohio	13, 234	3, 876	3, 028	1, 850	770	408	4, 260	1, 424	840	1, 996	804	1, 266
Wisconsin	4, 833	1, 538	971	596	242	133	1, 492	496	266	730	337	495
West North Central	18, 400	5, 833	3, 810	2, 474	901	435	5, 625	1, 941	928	2, 756	1, 342	1, 790
Iowa	2, 763	1, 131	409	253	105	51	813	253	114	446	185	225
Kansas	2, 383	830	404	256	109	39	658	220	108	330	278	213
Minnesota	5, 136	1, 485	1, 235	806	283	146	1, 543	535	216	792	300	573
Missouri	5, 461	1, 274	1, 328	877	300	151	1, 864	655	359	850	454	541
Nebraska	1, 596	638	279	181	66	32	446	163	80	203	88	145
North Dakota	554	217	96	65	21	10	164	60	32	72	24	53
South Dakota	507	258	59	36	17	6	137	55	19	63	13	40
Mountain	9, 242	2, 804	1, 931	1, 090	565	276	3, 007	921	564	1, 522	534	966
Arizona	1, 841	594	399	221	101	77	593	178	118	297	88	167
Colorado	3, 258	800	783	413	261	109	1, 016	318	187	511	267	392
Idaho	610	278	83	48	26	9	185	54	32	99	14	50
Montana	656	263	114	68	34	12	209	62	35	112	18	52
Nevada	423	130	63	34	16	13	159	51	32	76	22	49
New Mexico	863	235	204	126	53	25	281	89	52	140	42	101
Utah	1, 298	347	255	162	65	28	486	147	97	242	78	132
Wyoming	293	157	30	18	9	3	78	22	11	45	5	23

Table 50—Continued

Number of active non-Federal physicians (M.D.) in selected specialties in each State: 1967—Continued

Geographic division and State	Active non-Federal physicians (M.D.) December 31, 1967											
	Total	General practice [1]	Medical specialties				Surgical specialties				Psychiatry and neurology [5]	All others [6]
			Total	Internal medicine	Pediatrics [2]	Other [3]	Total	General surgery	Obstetrics, gynecology	Other [4]		
Pacific	39, 907	11, 111	8, 988	5, 374	2, 441	1, 173	12, 801	3, 442	2, 393	6, 966	3, 204	3, 803
Alaska	168	64	25	16	8	1	51	20	7	24	14	14
California	31, 928	8, 752	7, 285	4, 384	1, 946	955	10, 205	2, 692	1, 935	5, 578	2, 673	3, 013
Hawaii	935	239	235	126	81	28	302	95	66	141	66	93
Oregon	2, 605	759	569	342	133	94	889	253	146	490	147	241
Washington	4, 271	1, 297	874	506	273	95	1, 354	382	239	733	304	442
Puerto Rico	2, 000	649	485	237	180	68	566	160	172	234	114	186
Outlying areas	192	51	49	30	16	3	60	20	17	23	8	24

---

[1] Includes also physicians with no specialty specified.

[2] Includes also pediatric allergy and pediatric cardiology.

[3] Includes allergy, cardiovascular disease, dermatology, gastroenterology, and pulmonary diseases.

[4] Includes anesthesiology, colon and rectal surgery, neurological surgery, ophthalmology, orthopedic surgery, otolaryngology, plastic surgery, thoracic surgery, and urology.

[5] Includes also child psychiatry.

[6] Includes aviation medicine, occupational medicine, pathology and forensic pathology, physical medicine and rehabilitation, preventive medicine and public health, radiology (including diagnostic and therapeutic radiology), and specialties "not recognized" by the American Medical Association.

[7] Includes the United States, Puerto Rico, and outlying areas.

Source: Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968.

Table 51

Active non-Federal physicians (M.D.) per 100,000 civilian population in selected specialties in each State: 1967

Geographic division and State	Civilian population[1] July 1, 1967 (thousands)	Active non-Federal physicians (M.D.) per 100,000 civilian population December 31, 1967											
		Total	General practice[2]	Medical specialties				Surgical specialties				Psychiatry and neurology[6]	All other[7]
				Total	Internal medicine	Pediatrics[3]	Other[4]	Total	General surgery	Obstetrics, gynecology	Other[5]		
All locations[8]	198, 649	134	37	31	19	8	4	42	13	8	21	11	13
United States	195, 669	135	37	31	19	8	4	43	14	8	21	11	13
New England	11, 232	173	40	44	27	11	6	53	18	9	26	18	18
Connecticut	2, 904	177	36	46	28	12	6	55	17	12	26	19	21
Maine	969	98	36	17	10	5	2	32	11	5	16	4	9
Massachusetts	5, 377	195	42	52	32	12	8	59	22	9	28	22	20
New Hampshire	687	124	43	21	14	5	2	38	13	5	20	8	14
Rhode Island	879	147	38	35	20	10	5	51	18	9	24	11	12
Vermont	417	162	46	36	24	9	3	45	14	8	23	13	22
Middle Atlantic	36, 536	176	43	44	27	11	6	54	17	12	25	17	18
New Jersey	6, 912	131	38	31	18	8	5	42	13	10	19	8	12
New York	17, 971	216	46	58	36	15	7	66	22	14	30	25	21
Pennsylvania	11, 653	142	42	30	18	7	5	43	13	9	21	11	16
South Atlantic	28, 997	120	30	29	17	9	3	40	13	9	18	9	12
Delaware	515	128	31	31	16	10	5	40	13	10	17	11	15
District of Columbia	789	366	48	116	75	26	15	116	36	27	53	46	40
Florida	5, 945	124	30	30	18	8	4	45	13	9	23	7	12
Georgia	4, 408	98	26	23	13	7	3	34	11	8	15	6	9
Maryland	3, 608	169	33	46	27	15	4	55	18	14	23	18	17
North Carolina	4, 962	99	26	23	13	7	3	32	11	7	14	7	11
South Carolina	2, 590	77	30	12	7	4	1	26	9	5	12	3	6
Virginia	4, 369	112	31	27	16	8	3	36	12	7	17	7	11
West Virginia	1, 811	93	31	18	11	5	2	33	14	5	14	3	8

Table 51—Continued

Active non-Federal physicians (M.D.) per 100,000 civilian population in selected specialties in each State: 1967—Continued

Geographic division and State	Civilian population [1] July 1, 1967 (thousands)	Active non-Federal physicians (M.D.) per 100,000 civilian population December 31, 1967											
				Medical specialties				Surgical specialties					
		Totl	General practice [2]	Total	Internal medicine	Pediatrics [3]	Other [4]	Total	General surgery	Obstetrics, gynecology	Other [5]	Psychiatry and neurology [6]	All other [7]
East South Central	12, 885	91	30	18	10	6	2	30	11	5	14	4	9
Alabama	3, 507	79	27	17	9	6	2	25	9	5	11	3	7
Kentucky	3, 154	95	33	19	10	6	3	30	11	5	14	4	9
Mississippi	2, 317	73	31	11	6	3	2	22	8	4	10	3	6
Tennessee	3, 907	109	29	24	13	8	3	39	14	7	18	5	12
West South Central	18, 723	102	33	20	11	6	3	34	10	7	17	6	9
Arkansas	1, 985	80	35	12	6	4	2	22	7	4	11	5	6
Louisiana	3, 628	109	31	22	12	7	3	39	11	8	20	7	10
Oklahoma	2, 467	96	34	19	11	5	3	30	9	5	16	5	8
Texas	10, 643	106	33	22	12	7	3	35	10	7	18	6	10
East North Central	39, 085	119	36	26	15	7	4	37	12	8	17	8	12
Illinois	10, 815	131	41	29	17	8	4	39	13	8	18	9	13
Indiana	5, 010	95	38	15	9	4	2	29	9	4	16	4	9
Michigan	8, 595	118	30	26	16	6	4	39	13	9	17	10	13
Ohio	10, 476	126	37	29	18	7	4	41	14	8	19	7	12
Wisconsin	4, 188	115	37	23	14	6	3	35	12	6	17	8	12
West North Central	15, 886	116	37	24	15	6	3	35	12	6	17	9	11
Iowa	2, 750	100	41	15	9	4	2	29	9	4	16	7	8
Kansas	2, 257	106	37	18	11	5	2	29	10	5	14	12	10
Minnesota	3, 620	142	41	34	22	8	4	43	15	6	22	8	16
Missouri	4, 550	120	28	29	19	7	3	41	14	8	19	10	12
Nebraska	1, 429	112	45	20	13	5	2	31	11	6	14	6	10
North Dakota	618	90	35	16	11	3	2	27	10	5	12	4	8
South Dakota	662	77	39	9	5	3	1	21	8	3	10	2	6

Mountain	7,736	119	36	25	14	7	4	39	12	7	20	7	12
Arizona	1,615	114	37	25	14	6	5	37	11	7	19	5	10
Colorado	1,972	165	41	40	21	13	6	51	16	9	26	13	20
Idaho	699	87	40	12	7	4	1	26	8	4	14	2	7
Montana	688	95	38	17	10	5	2	30	9	5	16	3	7
Nevada	433	98	30	15	8	4	3	37	12	7	18	5	11
New Mexico	996	87	24	21	13	5	3	28	9	5	14	4	10
Utah	1,017	128	34	25	16	6	3	48	14	10	24	8	13
Wyoming	316	93	50	10	6	3	1	24	7	3	14	2	7
Pacific	24,590	162	45	37	22	10	5	52	14	10	28	13	15
Alaska	238	71	27	11	7	3	1	21	8	3	10	6	6
California	18,520	172	47	39	24	10	5	55	15	10	30	15	16
Hawaii	705	133	34	33	18	11	4	43	14	9	20	10	13
Oregon	1,975	132	38	29	17	7	5	45	13	7	25	8	12
Washington	3,152	136	41	28	16	9	3	43	12	8	23	10	14
Puerto Rico	2,684	75	24	19	9	7	3	21	6	6	9	4	7
Outlying areas	296	65	17	17	10	6	1	20	7	5	8	3	8

---

[1] State figures may not add to totals because of rounding. Previously published population figures for divisions and States were based on earlier estimates of the Bureau of the Census.

[2] Includes also physicians with no specialty specified.

[3] Includes also pediatric allergy and pediatric cardiology.

[4] Includes allergy, cardiovascular disease, dermatology, gastroenterology, and pulmonary diseases.

[5] Includes anesthesiology, colon and rectal surgery, neurological surgery, ophthalmology, orthopedic surgery, otolaryngology, plastic surgery, thoracic surgery, and urology.

[6] Includes also child psychiatry.

[7] Includes aviation medicine, occupational medicine, pathology and forensic pathology, physical medicine and rehabilitation, preventive medicine and public health, radiology (including diagnostic and therapeutic radiology), and specialties "not recognized" by the American Medical Association.

[8] Includes the United States, Puerto Rico, and outlying areas.

Source: Computed from table 50.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 403.

Table 52

This table shows the trends in physician/population ratios for all active non-Federal physicians (M.D.) and for those in various types of practice in counties in large and small metropolitan areas and outside metropolitan areas. The data for 1959 are not strictly comparable to those for the later years because of the changes described on pp. 30–31.

The number of active non-Federal physicians per 100,000 population increased from 158 to 185 in the counties in large metropolitan areas but remained almost unchanged in other counties. While the ratio for physicians in solo, partnership, etc., increased in counties in large metropolitan areas, it decreased slightly in small metropolitan areas, and remained about the same in other counties. For hospital based practice the ratio showed much the same trend. For physicians in teaching, administration, and research the increase was especially notable in large metropolitan areas.

Table 52

Active non-Federal physicians (M.D.) per 100,000 population, by type of county and type of practice: selected years 1959-67

Type of county and year	Active non-Federal physicians (M.D.)	Solo, partnership, group, and other[1] practice[2]			Hospital based practice[3]	Other types of practice[4]
		Total	General practice	Specialty practice		
All counties:						
1959	119	92	47	45	23	4
1963	125	94	36	58	25	6
1967	134	96	32	64	29	9
Counties in SMSA's with 1,000,000 or more inhabitants:[5]						
1959	158	116	52	64	36	6
1963	173	120	38	82	42	11
1967	185	121	33	88	50	14
Counties in SMSA's with 50,000 to 999,999 inhabitants:[6]						
1959	130	98	43	55	26	6
1963	125	94	31	63	24	7
1967	131	96	27	69	26	9
All other counties:[7]						
1959	76	65	46	19	9	2
1963	75	66	38	28	7	2
1967	76	66	35	31	8	2

---

[1] Includes physicians who render patient care and who are salaried or retained by other physicians or employed by non-Federal organizations other than hospitals.

[2] For 1959 consists of category "private practice."

[3] Includes interns, residents, and full-time staff.

[4] Includes medical school faculty, administration, and research.

[5] Previously called "greater metropolitan counties."

[6] Previously called "lesser metropolitan counties."

[7] Includes counties previously classified as "adjacent to metropolitan" and "isolated."

Source: Stewart, William H. and Pennell, Maryland Y. Health Manpower Source Book 10. Physicians' Age, Type of Practice, and Location. Public Health Service Publication No. 263, Sec. 10. Washington, U.S. Government Printing Office, 1960.

Theodore, C. N. and Sutter, G. E. Distribution of Physicians in the U.S., 1963. Chicago, American Medical Association, 1967.

Haug, J. N. and Roback, G. A. Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967. Chicago, American Medical Association, 1968.

Table 53

Since 1950 substantial numbers of physicians licensed for the first time in the United States have been graduates of foreign medical schools. The annual number so licensed has risen from 508 in 1950 to almost 2,300 in 1967. Since about 1960 the annual additions to the medical profession in the United States have included about 20 percent from foreign medical schools. In 1967 the figure reached an all-time high of 24 percent.

Table 53

Licentiates representing additions to the medical profession: selected years 1935–67

Year [1]	Total	Graduates of foreign medical schools [2]	Percent from foreign schools
1935	5, 510	....	....
1940	5, 887	....	....
1945	5, 748	....	....
1950	6, 002	508	8
1955	7, 737	1, 107	14
1960	8, 030	1, 619	20
1961	8, 023	1, 780	22
1962	8, 005	1, 557	19
1963	8, 283	1, 651	20
1964	7, 911	1, 506	19
1965	9, 147	1, 728	19
1966	8, 742	1, 745	20
1967	9, 326	2, 281	24

[1] Prior to 1965 figures may include from 25 to 150 osteopathic physicians a year.

[2] Includes an estimated 200 graduates a year from Canadian medical schools.

Source: State Board Number of Journal of the American Medical Association, June 17, 1968.

Table 54

The proportion of physicians in the United States who are graduates of medical schools in the United States dropped from 92 percent in 1959 to 82 percent in 1967. The proportion who are graduates of Canadian medical schools has remained at 2 percent, while the proportion from other foreign medical schools has increased from 6 to 16 percent.

Table 54

Physicians (M.D.), by location of medical school from which graduated: 1959 and 1967

Year	Total physicians	Graduates of—			Percent of total physicians from—		
		U.S. medical schools	Canadian medical schools	Other foreign medical schools	U.S. medical schools	Canadian medical schools	Other foreign medical schools
1959 [1]	[2] 241, 036	220, 222	5, 421	15, 154	92	2	6
1967 [3]	[4] 294, 072	242, 457	6, 274	45, 341	82	2	16

[1] As of July 1st.

[2] Includes active and inactive physicians and 239 whose medical school was unknown.

[3] As of December 31.

[4] Includes only active physicians.

Source: Stewart, William H. and Pennell, Maryland Y. Health Manpower Source Book 11. Medical School Alumni. Public Health Service Publication No. 263, Sec. 11. Washington, U.S. Government Printing Office, 1961.

Theodore, C. N.; Sutter, G. E.; Haug, J. N. Medical School Alumni, 1967. Chicago, American Medical Association, 1968.

Table 55

If the number of schools of medicine and osteopathic medicine continues at the levels shown in table 8, and the number of foreign medical graduates newly licensed and providing medical service in programs for which licensure is not required levels off at a lower figure than at present, it is estimated that there will be 386,000 physicians (M.D. and D.O.) in the United States in 1975. Of these 361,500 will be active and the ratio to population will be 160 active physicians per 100,000 population.

Table 55

Estimated supply of physicians: 1968–75

Year	Graduates of U.S. schools		Foreign medical graduates [1]	Deaths in year [2]	Physicians (M.D. + D.O.) Dec. 31		Population [3] Dec. 31 (thousands)	Physicians per 100,000 population	
	Medicine	Osteopathy			Total	Active		Total	Active
1968	7, 973	427	5, 000	4, 360	331, 080	311, 000	205, 791	161	151
1969	7, 830	410	4, 500	4, 470	339, 350	317, 700	206, 430	164	154
1970	8, 040	430	4, 000	4, 580	347, 240	325, 100	209, 077	166	155
1971	8, 480	450	3, 500	4, 680	354, 990	332, 400	212, 089	167	157
1972	8, 680	470	3, 000	4, 770	362, 370	339, 300	215, 753	168	157
1973	8, 950	480	3, 000	4, 880	369, 920	346, 400	219, 055	169	158
1974	9, 320	500	3, 000	4, 970	377, 770	353, 800	222, 492	170	159
1975	9, 770	560	3, 000	5, 090	386, 010	361, 500	226, 052	171	160

[1] Includes Canadian and other foreign graduates newly licensed in the United States each year and other foreign graduates providing medical services in programs for which licensure is not required.

[2] At 13 per 1,000 physicians annually.

[3] Includes the Armed Forces in the United States and abroad and civilians in 50 States and the District of Columbia.

Source: Bureau of Health Professions Education and Manpower Training, Division of Physician Manpower.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P–25, No. 381.

Dentistry

Dentists are licensed in all States and the District of Columbia. To qualify for a license a candidate must:

1. Graduate from an accredited dental school. Foreign graduates must take additional training in a U.S. dental school.
2. Pass a State licensing examination (all States and the District of Columbia require a written test and a practical examination, 23 States and the District of Columbia also require an oral examination).

A number of States license dentists who are already licensed in another State by reciprocity or endorsement.

Dental schools are accredited by the Council on Dental Education of the American Dental Association.

Tables 56 and 57

The first dental school in the United States was organized in 1840. Prior to that time, physicians practiced some dentistry, a few limiting their practice to this specialty. Dental practitioners who were not physicians either secured their training through an apprenticeship or were self-taught. During the years from 1840 to 1870, the number of dental schools slowly increased to 10, but apprentice training remained the chief source of supply.

The number of dental schools increased rapidly in the last decades of the 19th century, as the States began to enact legislation requiring either a diploma from a dental school or the successful completion of an examination in order to practice dentistry. By 1900 all but 11 States had passed such statutes, and the number of schools reached a total of 57, with over 2,000 graduates. Many of the dental schools established during this period were professionally inadequate, and as a result of the profession's successful effort to raise dental education standards, proprietary schools were gradually eliminated. By 1930 the number of active dental schools had decreased to 38.

Since 1930 the number of dental schools has been increasing slowly. At the same time, aside from low points in the mid-1930's and again during World War II, the number of dental students has increased gradually, from about 8,100 in 1930 to over 15,000 at present. In 1930 there were only 1,900 first-year dental students as compared to 3,200 in 1950 and to 4,200 in 1968. Similar increases have occurred in the number of dental graduates, resulting in a current level of over 3,400 per year.

Table 56

Dental schools and graduates: selected years 1840–1930

Year	Number of schools	Number of graduates
1840	1	....
1850	2	17
1860	3	64
1870	10	147
1880	14	315
1890	31	960
1900	57	2,091
1910	54	1,646
1920	46	906
1930	38	1,561

Source: American Dental Association, Council on Dental Education. Annual Report on Dental Education 1967–68.

Table 57

Dental schools, students, and graduates: selected years 1930–31 through 1968–69

Academic year	Number of schools	Number of students		Number of graduates
		Total	First year	
1930–31	38	8, 129	1, 929	1, 842
1935–36	39	7, 306	2, 161	1, 763
1940–41	39	7, 720	2, 305	1, 568
1945–46	39	7, 274	1, 201	2, 666
1950–51	42	11, 891	3, 226	2, 830
1955–56	43	12, 730	3, 445	3, 038
1960–61	47	13, 580	3, 616	3, 290
1961–62	47	13, 513	3, 605	3, 207
1962–63	48	13, 576	3, 680	3, 233
1963–64	48	13, 691	3, 770	3, 213
1964–65	49	13, 876	3, 836	3, 181
1965–66	49	14, 020	3, 806	3, 198
1966–67	49	14, 421	3, 942	3, 360
1967–68	50	14, 955	4, 200	3, 457
1968–69	52	15, 408	4, 203	[1] 3, 470

[1] Estimated.

Source: American Dental Association, Council on Dental Education. Dental Students' Register for each year through 1966–67, Annual Report on Dental Education 1967–68 and 1968–69.

Table 58

In 1968, there were 52 dental schools in operation in the United States and Puerto Rico, and by 1975 it is expected that the number will have increased to 57, according to present plans. In contrast, there were only 42 dental schools in the United States in 1950. Six new schools opened in the 1950's and five have begun operation so far in the 1960's. Another new school is expected to admit students before the end of the decade.

Table 58

New dental schools and number of schools in operation: 1950–51 through 1974–75

Academic year first class enrolled	Name of school	Number of schools with students
1950–51	University of North Carolina	42
1953–54	Loma Linda University	43
1956–57	Fairleigh Dickinson University; New Jersey College of Medicine and Dentistry.	45
1957–58	West Virginia University; University of Puerto Rico	47
1962–63	University of Kentucky	48
1964–65	University of California at Los Angeles	49
1967–68	Medical College of South Carolina	50
1968–69	University of Connecticut; Louisiana State University	52
1969–70	Medical College of Georgia	[1] 52
1971–72	University of Florida	[2] 52
Expected by 1974–75	University of Colorado; Southern Illinois University; State University of New York, Stony Brook; University of Texas, San Antonio; University of Oklahoma.	57

---

[1] St. Louis University School of Dentistry expects to graduate its last class in 1970.

[2] Loyola University of New Orleans School of Dentistry expects to graduate its last class in 1971.

Source: American Dental Association, Council on Dental Education. Dental Students' Register for each year through 1966–67, and Annual Report on Dental Education, 1967–68 and 1968–69; later years—Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

Table 59

Projections based on plans for expansion of existing dental schools and for establishment of new schools indicate that there will be more than 19,000 students and almost 5,500 first-year places in academic year 1974–75, increases of approximately 25 percent and 30 percent, respectively, over 1968–69. These estimates are based on a continuing support for dental school construction under the Health Professions Educational Assistance Act. The number of dental graduates is expected to reach 4,330 by 1974–75, an increase of about 850 annual graduates over 1968.

Table 59

Estimated number of dental students and graduates: 1969–70 through 1974–75

Academic year	Number of students				Number of graduates [3]
	Total		First year		
	High estimate [1]	Low estimate [2]	High estimate [1]	Low estimate [2]	
1969–70	15,700	15,700	4,440	4,440	3,530
1970–71	16,300	16,300	4,610	4,610	3,710
1971–72	17,000	16,900	4,840	4,790	3,720
1972–73	17,800	17,500	5,090	4,800	3,970
1973–74	18,600	17,900	5,300	4,800	4,130
1974–75	19,400	18,000	5,480	4,800	4,330

---

[1] Assuming that construction funds under the Health Professions Educational Assistance Act will continue at a level of over $35 million annually for dental schools.

[2] Assuming no extension of construction funds.

[3] Number of graduates will not be affected through 1975 by change in funds for construction.

Source: Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

Table 60 and Figure 8

The 52 dental schools in operation in the 1968-69 academic year were distributed among 28 States, the District of Columbia, and Puerto Rico. Seven additional schools are in various stages of development in the States of Georgia, Florida, Colorado, Illinois, New York, Texas, and Oklahoma. One of these schools, the School of Dentistry at the Medical College of Georgia, plans to enroll its first class in the 1969–70 academic year. Despite this continuing expansion of dentist training capacity, when all of the new schools are in operation, there will still be 19 States which have no dental school.

Table 60

Dental schools, students, and graduates, by State: 1968

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year	
Total	15,408	4,203	3,457
ALABAMA			
University of Alabama	207	57	42
CALIFORNIA			
Loma Linda University	231	61	57
University of California, Los Angeles	294	96	27
University of California, San Francisco	299	75	80
University of Southern California	426	119	105
University of the Pacific	295	97	58
CONNECTICUT			
University of Connecticut	17	17	....
DISTRICT OF COLUMBIA			
Georgetown University	398	112	92
Howard University	310	88	76
GEORGIA			
Emory University	318	85	67
ILLINOIS			
Loyola University of Chicago	403	128	77
Northwestern University	322	98	71
University of Illinois	362	99	93
INDIANA			
Indiana University	391	104	89
IOWA			
University of Iowa	227	62	50
KENTUCKY			
University of Kentucky	185	54	43
University of Louisville	218	65	51
LOUISIANA			
Louisiana State University	30	30	....
Loyola University of New Orleans	169	....	53
MARYLAND			
University of Maryland	392	105	89
MASSACHUSETTS			
Harvard School of Dental Medicine	60	16	11
Tufts University	411	108	94

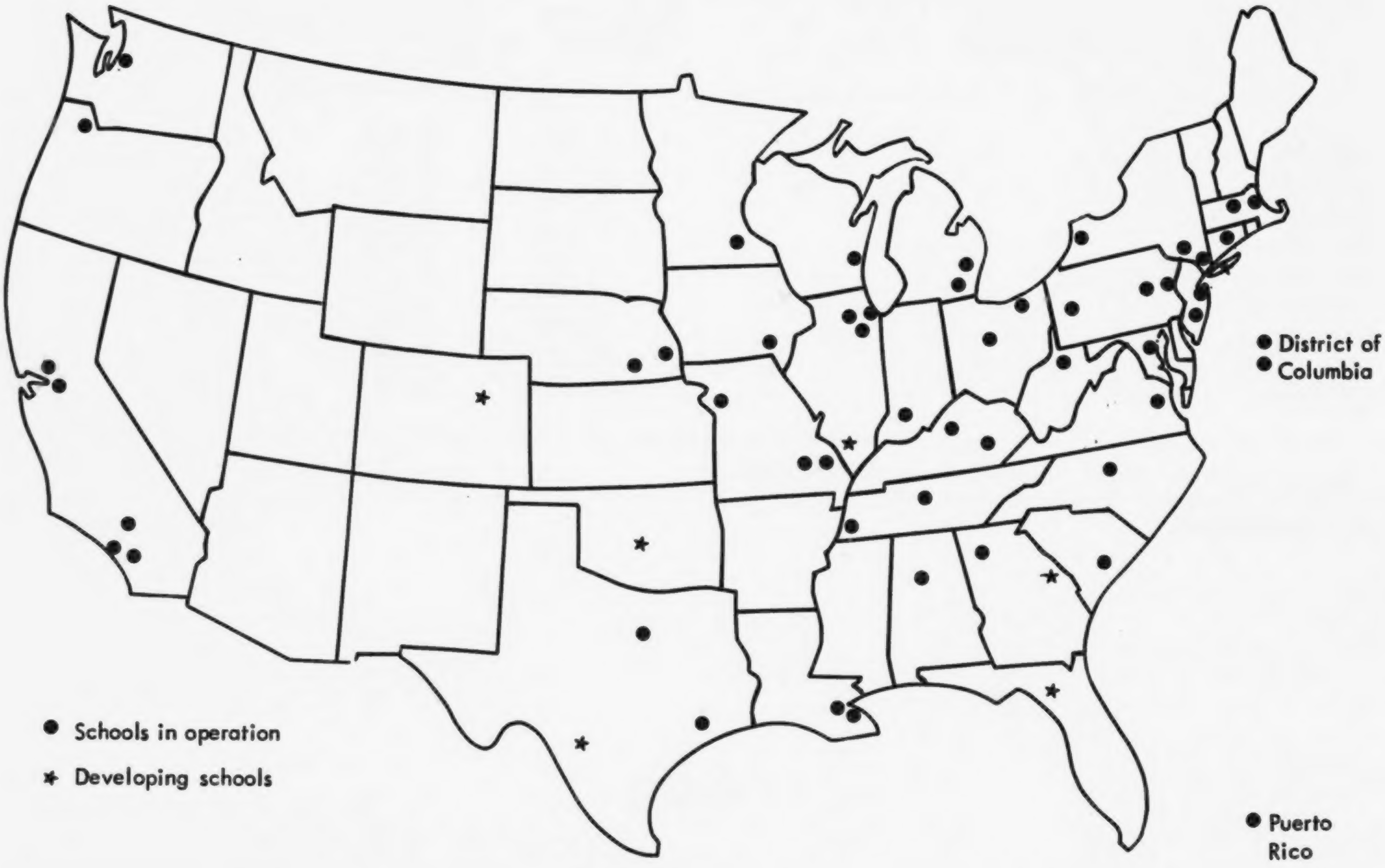
Table 60—Continued

Dental schools, students, and graduates, by State: 1968—Continued

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year	
MICHIGAN			
University of Detroit	321	84	58
University of Michigan	375	103	81
MINNESOTA			
University of Minnesota	419	115	94
MISSOURI			
St. Louis University	163	....	56
University of Missouri at Kansas City	470	121	113
Washington University	204	57	42
NEBRASKA			
Creighton University	192	51	43
University of Nebraska	200	60	32
NEW JERSEY			
Fairleigh Dickinson University	207	55	43
New Jersey College of Medicine & Dentistry	181	61	42
NEW YORK			
Columbia University	142	46	29
New York University	678	175	150
State University of New York, Buffalo	279	78	64
NORTH CAROLINA			
University of North Carolina	207	55	45
OHIO			
Case Western Reserve University	255	67	53
Ohio State University	589	155	140
OREGON			
University of Oregon	312	85	77
PENNSYLVANIA			
Temple University	502	136	114
University of Pennsylvania	554	149	115
University of Pittsburgh	428	116	102
SOUTH CAROLINA			
Medical College of South Carolina	45	24	....
TENNESSEE			
Meharry Medical College	136	46	28
University of Tennessee	397	108	113
TEXAS			
Baylor University	389	100	91
University of Texas, Houston	386	100	93
VIRGINIA			
Medical College of Virginia	302	81	68
WASHINGTON			
University of Washington	300	80	69
WEST VIRGINIA			
West Virginia University	208	58	46
WISCONSIN			
Marquette University	469	121	105
PUERTO RICO			
University of Puerto Rico	133	40	26

Source: American Dental Association, Council on Dental Education. Annual Report on Dental Education, 1968–69.

FIGURE 8.—Dental schools in operation and in development in the United States: 1968–69.



Tables 61 and 62

The annual number of applicants to dental schools has risen from a low of some 5,800 in academic year 1961–62 to 10,264 in 1967–68. In relation to first-year dental students, applicants have increased from 1.6 to 2.4 during the same period. About three of every five applicants for dental school training in the early 1960's were accepted as compared to only two of every five in the last few years.

Dental school training capacity has not kept pace with the potential supply of dental students. The best measurement of the potential supply is the number of college graduates, since a majority of dental students have earned a bachelor's degree. While the number of college graduates more than doubled between 1955–56 and 1967–68, the number of dental applicants increased by less than one-half, resulting in a substantial drop from 2.6 to 1.8 dental applicants per 100 bachelor's degrees granted. In relation to young people, the trend has been irregular. The number of dental school applicants per 1,000 persons aged 20 was 2.7 in 1967-68, the same as it was in 1960–61. This ratio reached a high point of 3.6 in 1965–66 and 1966–67.

Table 61

Dental school applicants: 1955–56 and 1960–61 through 1967–68

Academic year	Dental school applicants	First-year dental students	Applicants per student enrolled	Percent of applicants enrolled
1955–56	7, 205	3, 445	2.1	48
1960–61	6, 119	3, 616	1.7	59
1961–62	5, 841	3, 605	1.6	62
1962–63	6, 566	3, 680	1.8	56
1963–64	8, 969	3, 770	2.4	42
1964–65	9, 598	3, 836	2.5	40
1965–66	9, 988	3, 806	2.6	38
1966–67	10, 177	3, 942	2.6	39
1967–68	10, 264	4, 200	2.4	41

Source: American Dental Association, Council on Dental Education. Applicants to Dental School 1967 and previous years (unpublished).

Table 62

Dental school applicants in relation to young people and to college graduates: 1955–56 and 1960–61 through 1967–68

Academic year	Number of dental applicants	Population age 20	Bachelor's degrees granted [1]	Dental applicants per 1,000 persons age 20	Dental applicants per 100 bachelor's degrees granted
1955–56	7, 205	2, 136, 000	275, 407	3.4	2.6
1960–61	6, 119	2, 281, 000	382, 821	2.7	1.6
1961–62	5, 841	2, 408, 000	365, 337	2.4	1.6
1962–63	6, 566	2, 623, 000	382, 822	2.5	1.7
1963–64	8, 969	2, 955, 000	410, 421	3.0	2.2
1964–65	9, 598	2, 790, 000	460, 467	3.4	2.1
1965–66	9, 988	2, 804, 000	492, 984	3.6	2.0
1966–67	10, 177	2, 790, 000	524, 117	3.6	1.9
1967–68	10, 264	3, 761, 000	562, 369	2.7	1.8

[1] Data are for academic year preceding the year of application. Data for 1955–56 differ slightly from data for later years because of changes in definitions and techniques used.

Source: American Dental Association, Council on Dental Education. Applicants to Dental School 1967 and previous years (unpublished).

National Science Foundation. Comparisons of Earned Degrees Awarded 1901–1962—With Projections to 2000. Washington, The Foundation, 1964.

U.S. Department of Health, Education, and Welfare; Office of Education. Earned Degrees, 1967–68. Washington, U.S. Government Printing Office, 1969 and previous annual publications.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P–25, Nos. 311, 314, 385.

Tables 63 and 64

The number of active dentists in the United States as reported by the Bureau of the Census increased from about 2,900 in 1850 to almost 30,000 in 1900, improving the dentist/population ratio from 13 to 39 active dentists per 100,000 persons. The ratio continued to improve until 1930, when the most favorable ratio of dentists to population ever attained in this country—58 dentists per 100,000 population—was reached. By 1950 the number of dentists had increased to almost 75,000, but the dentist supply in relation to population had decreased considerably.

The American Dental Association reported that there were 87,200 dentists in 1950, including not only active dentists but also those who were retired or engaged in nondental activities. This number included dentists in Federal service (the Armed Forces, the Public Health Service, and the Veterans Administration). In 1968 the American Dental Association count of total dentists was 113,600. Between 1950 and 1968, the number of active dentists increased from 77,900 to 100,000, according to estimates prepared by the Division of Dental Health. Active non-Federal dentists increased from 75,300 to 92,000 during the same period. The ratios to population for total dentists, active dentists, and active non-Federal dentists did not improve between 1950 and 1968.

Table 63

Number of active dentists and dentist/population ratios: selected years 1850–1950

Year	Number of active dentists [1]	Population (thousands)	Dentists per 100,000 population
1850	2,923	23,261	13
1860	5,606	31,513	18
1870	7,988	39,905	20
1880	12,314	50,262	24
1890	17,498	63,056	28
1900	29,665	76,094	39
1910	39,997	92,407	43
1920	56,152	106,466	53
1930	71,055	123,077	58
1940	69,921	131,954	53
1950	74,855	151,234	49

[1] Excluding those in the Armed Forces.

Source: U.S. Bureau of the Census. Historical Statistics of the United States, Colonial Times to 1957. Washington, U.S. Government Printing Office, 1960.

Table 64

Number of dentists and dentist/population ratios: selected years 1950–68

Year [1]	Number of dentists [2]		Population [4] (thousands)	Dentists per 100,000 population		Active non-Federal dentists [3]	Civilian population (thousands)	Active non-Federal dentists per 100,000 civilian population
	Total	Active [3]		Total	Active [3]			
1950	87,164	77,900	152,271	57	51	75,313	150,790	50
1955	94,711	83,509	165,931	57	50	76,087	162,967	47
1960	101,947	89,215	180,684	56	49	82,630	178,153	46
1965	109,320	93,442	194,592	56	48	86,317	191,894	45
1966	111,130	95,400	196,920	56	48	88,025	193,780	45
1967	112,152	98,670	199,118	56	50	90,716	195,669	46
1968	113,636	100,010	201,166	56	50	92,013	197,571	47

---

[1] As of July 1.

[2] Excludes graduates of the year concerned. Includes dentists in 50 States and the District of Columbia.

[3] Estimated.

[4] Includes the Armed Forces in the United States and abroad and civilians in 50 States and the District of Columbia.

Source: Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

American Dental Association, Bureau of Membership Records. 1968 American Dental Directory. Chicago, The Association, 1968. Also prior annual editions.

American Dental Association, Bureau of Economic Research and Statistics. Distribution of Dentists in the United States by State, Region, District, and County. Chicago, The Association. Annual issues.

Unpublished data from the American Dental Association.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P–25, No. 408.

Table 65

More than a threefold increase in the number of dental specialists occurred between 1955 and 1968. Although most dentists are general practitioners, about 9,300 dentists were recognized by the American Dental Association as specialists in eight areas of dentistry in 1968. Two-thirds of the specialists limited their practice to orthodontics and to oral surgery. The next largest group specialized in pedodontics (dentistry for children).

Table 65

Number of dental specialists: selected years 1955–68

Type of specialist	1955	1960	1965	1968
All specialists	3,034	4,170	6,462	9,257
Endodontists [1]				413
Oral pathologists	24	42	52	61
Oral surgeons	844	1,183	1,636	2,198
Orthodontists	1,521	2,097	3,437	4,008
Pedodontists	148	229	568	1,037
Periodontists	245	307	376	868
Prosthodontists	225	278	336	597
Public health dentists	27	34	57	75

---

[1] Endodontics was not recognized as a dental specialty in 1955 or 1960, and data are not available for 1965. There were 367 endodontists in 1966.

Source: American Dental Association, Bureau of Economic Research and Statistics. Facts About States for the Dentist Seeking a Location. Annual issues and unpublished data for 1968.

Table 66 and Figure 9

In 1968 the number of active non-Federal dentists in relation to population was 47 per 100,000 for the Nation as a whole. This ratio varied widely by State, however, ranging from a high of 67 in New York to a low of 22 in South Carolina. By geographic division, the Middle Atlantic and Pacific States had the highest ratios of dentists to population, 59 and 57, respectively. On the other hand, all three geographic divisions in the South had relatively unfavorable ratios, with the lowest ratio of 32 dentists per 100,000 population found in the East South Central States.

Table 66

Number of non-Federal dentists and dentist/population ratios in each State: 1968

Geographic division and State	Number of non-Federal dentists July 1, 1968 [1]		Civilian population July 1, 1968 [2] (thousands)	Rate per 100,000 civilian population	
	Total	Active		Total	Active
United States	105, 636	92, 013	197, 571	53	47
New England	7, 158	6, 211	11, 352	63	55
Connecticut	1, 892	1, 685	2, 951	64	57
Maine	425	348	963	44	36
Massachusetts	3, 855	3, 314	5, 431	71	61
New Hampshire	327	291	699	47	42
Rhode Island	465	407	883	53	46
Vermont	194	166	424	46	39
Middle Atlantic	25, 125	21, 587	36, 770	68	59
New Jersey	4, 297	3, 783	7, 020	61	54
New York	14, 251	12, 183	18, 040	79	68
Pennsylvania	6, 577	5, 621	11, 709	56	48
South Atlantic	12, 031	10, 720	29, 295	41	37
Delaware	243	226	525	46	43
District of Columbia	829	724	790	105	92
Florida	3, 174	2, 745	6, 048	52	45
Georgia	1, 399	1, 266	4, 452	31	28
Maryland	1, 616	1, 466	3, 677	44	40
North Carolina	1, 590	1, 423	5, 006	32	28
South Carolina	648	581	2, 584	25	22
Virginia	1, 878	1, 725	4, 412	43	39
West Virginia	654	564	1, 801	36	31
East South Central	4, 543	4, 088	12, 943	35	32
Alabama	1, 142	1, 038	3, 522	32	29
Kentucky	1, 178	1, 041	3, 160	37	33
Mississippi	644	581	2, 321	28	25
Tennessee	1, 579	1, 428	3, 940	40	36

Table 66—Continued

Number of non-Federal dentists and dentist/population ratios in each State: 1968—Continued

Geographic division and State	Number of non-Federal dentists July 1, 1968 [1]		Civilian population July 1, 1968 [2] (thousands)	Rate per 100,000 civilian population	
	Total	Active		Total	Active
West South Central	6, 997	6, 270	18, 914	37	33
Arkansas	612	543	1, 976	31	27
Louisiana	1, 368	1, 227	3, 678	37	33
Oklahoma	994	874	2, 475	40	35
Texas	4, 023	3, 626	10, 784	37	34
East North Central	20, 797	17, 989	39, 487	53	46
Illinois	6, 357	5, 387	10, 934	58	49
Indiana	2, 298	2, 007	5, 051	45	40
Michigan	4, 472	3, 990	8, 720	51	46
Ohio	5, 136	4, 463	10, 564	49	42
Wisconsin	2, 534	2, 142	4, 218	60	51
West North Central	8, 866	7, 419	15, 947	56	47
Iowa	1, 541	1, 288	2, 771	56	46
Kansas	993	841	2, 262	44	37
Minnesota	2, 516	2, 127	3, 642	69	58
Missouri	2, 300	1, 903	4, 583	50	42
Nebraska	948	793	1, 424	67	56
North Dakota	278	228	614	45	37
South Dakota	290	239	651	45	37
Mountain	3, 947	3, 517	7, 771	51	45
Arizona	727	650	1, 631	45	40
Colorado	1, 197	1, 052	1, 986	60	53
Idaho	329	299	699	47	43
Montana	366	318	686	53	46
Nevada	197	184	439	45	42
New Mexico	344	315	990	35	32
Utah	634	564	1, 029	62	55
Wyoming	153	135	311	49	43
Pacific	16, 172	14, 212	25, 093	64	57
Alaska	95	90	241	39	37
California	11, 922	10, 419	18, 918	63	55
Hawaii	482	437	727	66	60
Oregon	1, 547	1, 373	2, 003	77	69
Washington	2, 126	1, 893	3, 204	66	59

[1] Excludes 1968 graduates.

[2] State figures may not add to totals because of rounding.

Source: Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 414.

FIGURE 9.—Active non-Federal dentists in relation to population in each State: 1968.

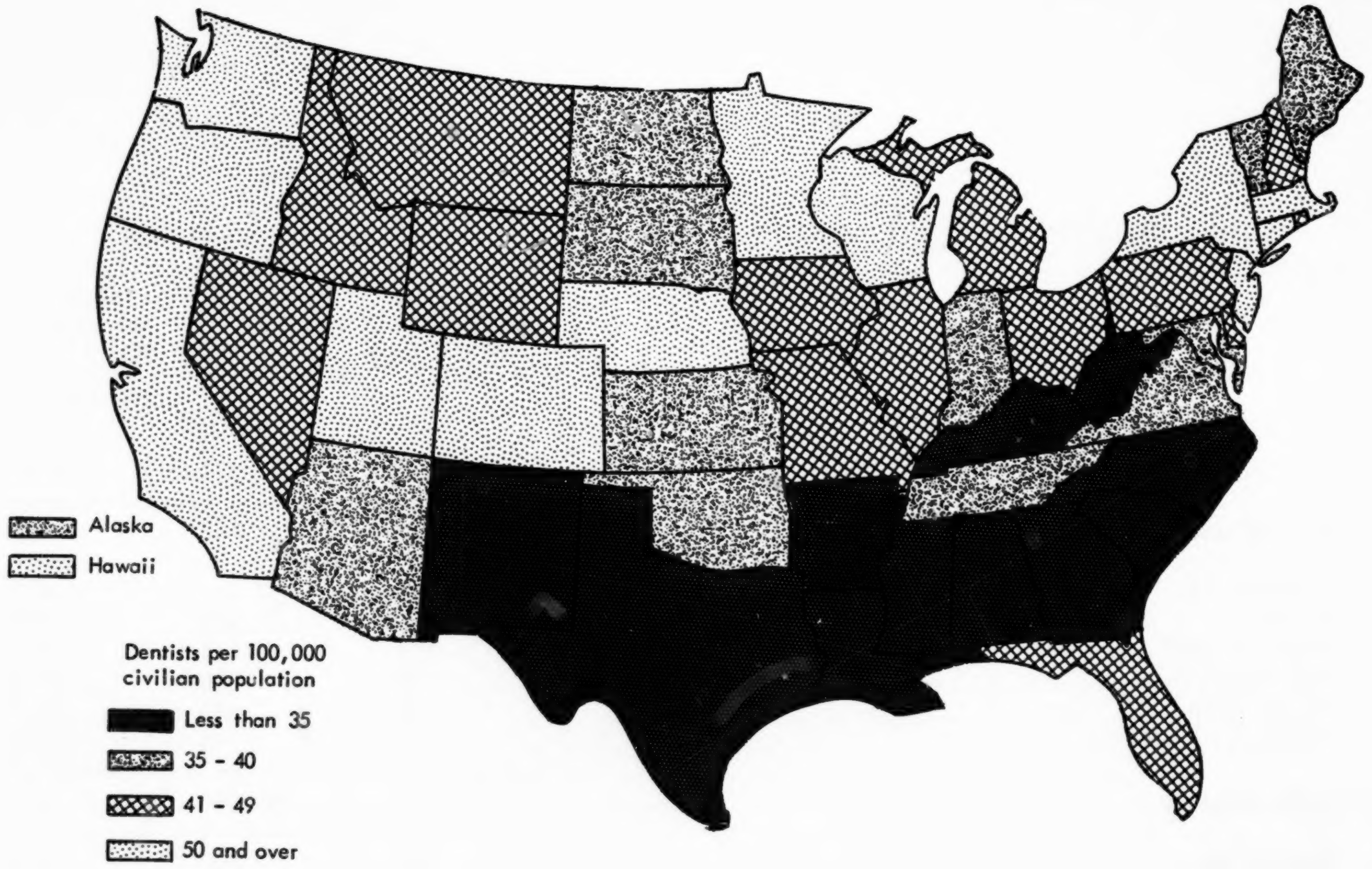

Alaska
Hawaii
Dentists per 100,000 civilian population
Less than 35
35 - 40
41 - 49
50 and over

Table 67

In 1968 there were 8,600 non-Federal dental specialists in the United States, providing 4.3 specialists to serve every 100,000 persons in the civilian population. Geographically, the Pacific States had the best supply of dental specialists, with a ratio of 7.1, while the East South Central States had the lowest ratio, with only 2.6 dental specialists for every 100,000 persons. Among the individual States, the best supplies of dental specialists were in California, Massachusetts, and Connecticut.

Table 67

Number of non-Federal dental specialists and dentist/population ratios in each State: 1968

Geographic division and State	Number of non-Federal dental specialists	Civilian population July 1, 1968 [1] (thousands)	Dental specialists per 100,000 civilian population
United States	8, 558	197, 571	4.3
New England	626	11, 352	5.5
Connecticut	192	2, 951	6.5
Maine	25	963	2.6
Massachusetts	358	5, 431	6.6
New Hampshire	10	699	1.4
Rhode Island	31	883	3.5
Vermont	10	424	2.4
Middle Atlantic	1, 832	36, 770	5.0
New Jersey	381	7, 020	5.4
New York	1, 047	18, 040	5.8
Pennsylvania	404	11, 709	3.5
South Atlantic	962	29, 295	3.3
Delaware	24	525	4.6
District of Columbia	55	790	7.0
Florida	294	6, 048	4.9
Georgia	120	4, 452	2.7
Maryland	147	3, 677	4.0
North Carolina	108	5, 006	2.2
South Carolina	40	2, 584	1.5
Virginia	128	4, 412	2.9
West Virginia	46	1, 801	2.6
East South Central	332	12, 943	2.6
Alabama	99	3, 522	2.8
Kentucky	82	3, 160	2.6
Mississippi	20	2, 321	0.9
Tennessee	131	3, 940	3.3

Table 67—Continued

Number of non-Federal dental specialists and dentist/population ratios in each State: 1968—Continued

Geographic division and State	Number of non-Federal dental specialists	Civilian population July 1, 1968 [1] (thousands)	Dental specialists per 100,000 civilian population
West South Central	584	18, 914	3.1
Arkansas	46	1, 976	2.3
Louisiana	99	3, 678	2.7
Oklahoma	92	2, 475	3.7
Texas	347	10, 784	3.2
East North Central	1, 546	39, 487	3.9
Illinois	438	10, 934	4.0
Indiana	176	5, 051	3.5
Michigan	435	8, 720	5.0
Ohio	381	10, 564	3.6
Wisconsin	116	4, 218	2.8
West North Central	583	15, 947	3.7
Iowa	122	2, 771	4.4
Kansas	79	2, 262	3.5
Minnesota	107	3, 642	2.9
Missouri	199	4, 583	4.3
Nebraska	54	1, 424	3.8
North Dakota	10	614	1.6
South Dakota	12	651	1.8
Mountain	312	7, 771	4.0
Arizona	56	1, 631	3.4
Colorado	114	1, 986	5.7
Idaho	22	699	3.1
Montana	21	686	3.1
Nevada	20	439	4.6
New Mexico	43	990	4.3
Utah	28	1, 029	2.7
Wyoming	8	311	2.6
Pacific	1, 781	25, 093	7.1
Alaska	1	241	0.4
California	1, 470	18, 918	7.8
Hawaii	38	727	5.2
Oregon	85	2, 003	4.2
Washington	187	3, 204	5.8

[1] State figures may not add to totals because of rounding.

Source: American Dental Association, Bureau of Economic Research and Statistics. Unpublished data.

Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P–25, No. 414.

Table 68

If dental school capacity continues to expand at the present rate, by 1975 there will be over 4,300 dental graduates a year. Allowing for losses to the profession due to deaths, it is projected that there will be 123,500 dentists in 1975, of whom 109,200 will be in active practice. This supply will be enough to take care of increased population, and the rate of active dentists will be maintained at 49 per 100,000 population. However, individual demands for dental care are expected to increase greatly in the next few years as a result of rising income and educational levels and of new methods of financing dental services. Since the Nation's future supply of dentists will not be adequate to meet both population increases and average individual care demands, it is necessary that dentist productivity be substantially increased, primarily through much greater utilization of dental auxiliaries.

Table 68

Estimated supply of dentists: 1969–75

Year	Graduates of U.S. dental schools [1]	Losses from the profession due to deaths [2]	Dentists as of July 1 [3]		Population July 1 [4] (thousands)	Dentists per 100,000 population	
			Total	Active		Total	Active
1969	3,470	2,280	114,860	101,100	204,470	56	49
1970	3,530	2,220	116,050	102,200	207,330	56	49
1971	3,710	2,280	117,360	103,400	210,350	56	49
1972	3,720	2,330	118,790	104,800	213,510	56	49
1973	3,970	2,360	120,180	106,000	216,800	55	49
1974	4,130	2,400	121,790	107,600	220,230	55	49
1975	4,330	2,440	123,520	109,200	223,790	55	49

---

[1] Assuming that construction funds under the Health Professions Educational Assistance Act will continue at a level of over $35 million annually for dental schools.

[2] Estimated by applying mortality rates for white males by single years to the 1968 dentist supply.

[3] Excludes graduates of the year concerned.

[4] Includes the Armed Forces in the United States and abroad and civilians in 50 States and the District of Columbia.

Source: Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 381.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Vital Statistics of the United States, 1966. Vol. II—Sec. 5, Life Tables. Washington, U.S. Government Printing Office, 1968.

Optometry

All States and the District of Columbia require a license for the practice of optometry. To qualify for a license an applicant must:

1. Graduate from an accredited school of optometry.
2. Pass a State examination (all States and the District of Columbia require a written test, 48 States and the District of Columbia require a practical test, and 33 States require an oral examination).

Schools of optometry are accredited by the Council on Education of the American Optometric Association.

Tables 69 and 70

The study of optometry requires 6 years after graduation from high school, including 2 years of preoptometry education in an accredited college and 4 years of professional education. Some schools are in the transition period of changing from 3 to 4 years of professional education.

In 1968 there were 10 schools of optometry in operation in the United States. The number of students enrolled in the last 3 or 4 years of optometric education (the professional years) was almost 2,000 in 1967–68, an increase of some 80 percent over 1960–61. The number of graduates reached a peak of 961 in 1950–51, dropped to a low in 1961–62 and was 464 in 1967–68.

The number of students is expected to increase to 2,960 by 1971–72, with 670 graduates for that year.

Table 69

Schools of optometry, students, and graduates: selected years 1931–32 through 1967–68

Academic year	Number of schools	Number of students [1]		Number of graduates
		Total	First year	
1931–32	8	950	....	340
1936–37	8	2,100	....	525
1941–42	8	500	....	100
1946–47	9	3,576	....	528
1950–51	10	2,435	....	961
1955–56	11	1,233	....	333
1960–61	10	1,101	407	316
1961–62	10	1,180	437	299
1962–63	10	1,263	491	359
1963–64	10	1,364	516	346
1964–65	10	1,582	612	406
1965–66	10	1,741	658	384
1966–67	10	1,876	676	484
1967–68	10	1,994	658	464

[1] Undergraduate students in last 3 or 4 years of optometric education.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.
American Optometric Association.

Table 70

Estimated number of optometric students and graduates: 1968–69 through 1971–72

Academic year	Number of students		Number of graduates
	Total [1]	First year	
1968–69	2,240	780	480
1969–70	2,460	800	440
1970–71	2,750	830	510
1971–72	2,960	840	670

[1] Undergraduate students in last 3 or 4 years of optometric education.

Source: Bureau of Health Professions Education and Man power Training, Division of Allied Health Manpower.

Table 71 and Figure 10

The 10 schools of optometry in 1968 were located in nine States; California had two schools. There was one school in New England, one in the Middle Atlantic States, one each in East and West South Central, and three each in East North Central and Pacific. The other three geographic divisions had no schools.

Table 71

Schools of optometry, students, and graduates, by State: 1967–68

State and school	Number of students		Number of graduates
	Total [1]	First year	
Total	1,994	658	464
CALIFORNIA			
Los Angeles College of Optometry	171	61	53
University of California	123	38	47
ILLINOIS			
Illinois College of Optometry	270	97	69
INDIANA			
Indiana University	125	41	10
MASSACHUSETTS			
Massachusetts College of Optometry	158	44	32
OHIO			
Ohio State University	168	50	30
OREGON			
Pacific University	162	59	48
PENNSYLVANIA			
Pennsylvania College of Optometry	348	106	62
TENNESSEE			
Southern College of Optometry	286	102	77
TEXAS			
University of Houston	183	60	36

[1] Undergraduate students in last 3 or 4 years of optometric education.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

American Optometric Association.

FIGURE 10.—Schools of optometry in the United States: 1968–69.

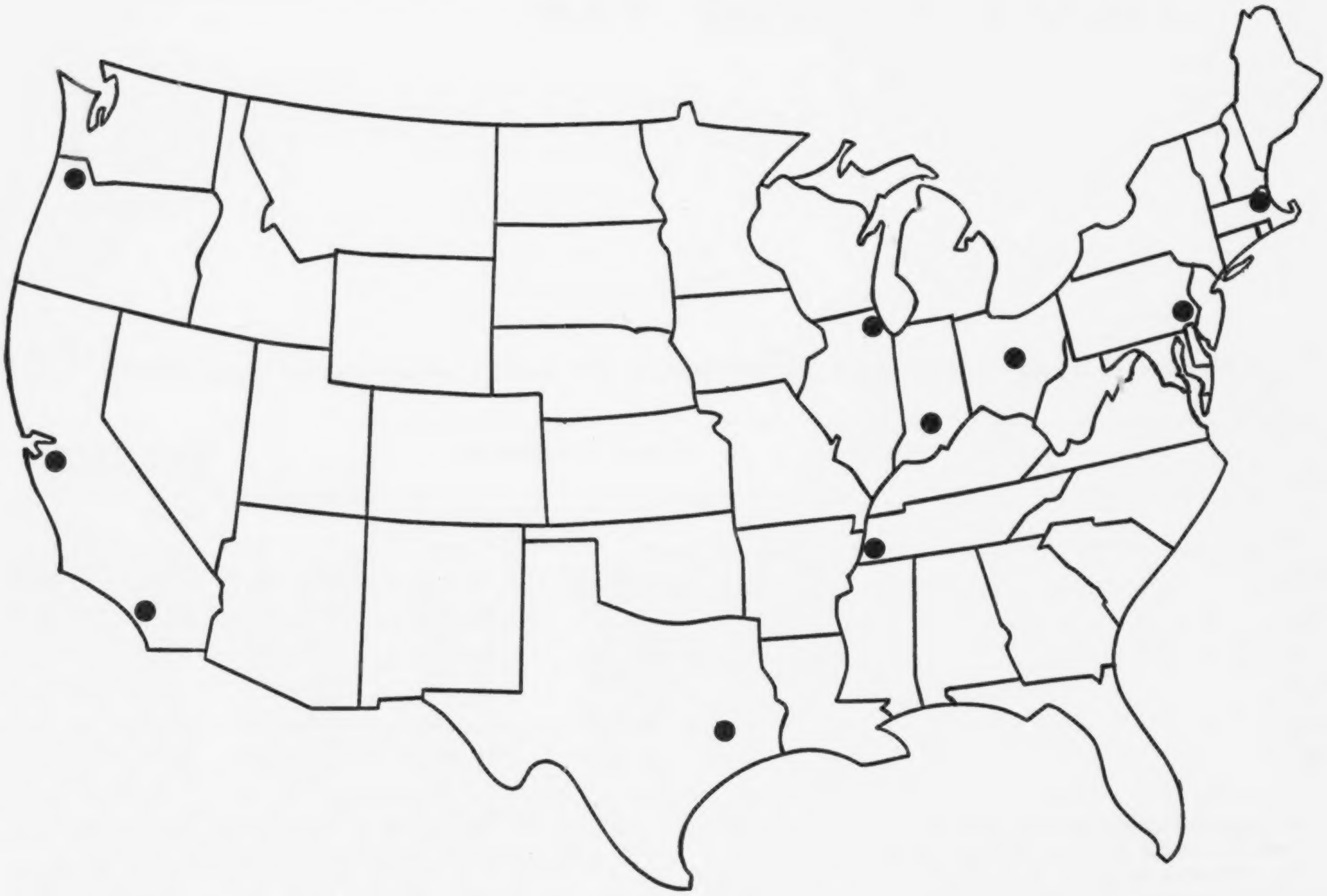


Table 72

Figures from the American Optometric Association indicate that there have been between 19,000 and 21,000 optometrists since 1930. The decennial population censuses show only 8,400 active optometrists in 1930 with an increase to 16,100 by 1960. Census data for occupations with small numbers of persons are subject to many reporting errors.

The American Optometric Association estimates that there are about 17,000 active optometrists, based on an active membership in the Association of 14,500.

Table 72

Number of licensed optometrists and optometrist/population ratios: selected years 1930–67

Year	Number of optometrists[1]		Population[3] (thousands)	Optometrists per 100,000 population	
	Total	Active[2]		Total	Active
1930	19, 458	8, 377	123, 188	15.8	6.8
1940	19, 734	10, 450	132, 122	14.9	7.9
1950	20, 792	14, 750	151, 684	13.7	9.7
1960	21, 824	16, 081	180, 684	12.1	8.9
1966[4]	20, 610	17, 000	196, 173	10.5	8.7
1967[5]	20, 565	17, 000	200, 090	10.3	8.5

[1] For 1930–50 includes 48 States and the District of Columbia; for 1960–67 includes 50 States and the District of Columbia.

[2] For 1930–40 data are for economically active civilians, for 1950–60 for experienced civilian labor force—all from population censuses. Data for 1966–67 are Public Health Service estimates.

[3] Includes the Armed Forces in the United States and abroad for all years; for 1930–50 includes civilians in 48 States and the District of Columbia; for 1960–67 includes civilians in 50 States and the District of Columbia. For 1930–60 as of July 1.

[4] As of March 1.

[5] As of December.

Source: The Blue Book of Optometrists. Professional Press Inc., 1968. Also prior biennial editions of this directory.

U.S. Bureau of the Census. Occupational Trends in the United States 1900 to 1950. Working Paper No. 5. Washington, U.S. Department of Commerce, 1958.

U.S. Bureau of the Census. U.S. Census of Population: 1960. Detailed Characteristics. U.S. Summary. Final Report. PC(1)-1D. Washington, U.S. Government Printing Office, 1963.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, Nos. 368, 417.

Table 73

The 20,600 licensed optometrists in the United States at the end of 1967 give a rate of 10.4 optometrists per 100,000 population. This rate varied from 5.5 in Alabama and Maryland to 17.8 in Illinois.

Table 73

Number of licensed optometrists and optometrist/population ratios in each State: 1967

Geographic division and State	Number of licensed optometrists December 1967	Population [1] July 1, 1967 (thousands)	Rate per 100,000 population
United States	20, 565	197, 863	[2] 10.4
New England	1, 483	11, 344	13.1
Connecticut	270	2, 918	9.3
Maine	126	982	12.8
Massachusetts	833	5, 434	15.3
New Hampshire	73	691	10.6
Rhode Island	144	901	16.0
Vermont	37	420	8.8
Middle Atlantic	3, 924	36, 676	10.7
New Jersey	718	6, 981	10.3
New York	1, 858	18, 023	10.3
Pennsylvania	1, 348	11, 672	11.5
South Atlantic	2, 083	29, 583	7.0
Delaware	33	524	6.3
District of Columbia	84	808	10.4
Florida	514	6, 035	8.5
Georgia	281	4, 490	6.3
Maryland	203	3, 680	5.5
North Carolina	348	5, 059	6.9
South Carolina	158	2, 638	6.0
Virginia	299	4, 541	6.6
West Virginia	163	1, 807	9.0
East South Central	886	13, 014	6.8
Alabama	193	3, 533	5.5
Kentucky	238	3, 201	7.4
Mississippi	130	2, 344	5.5
Tennessee	325	3, 936	8.3
West South Central	1, 496	19, 009	7.9
Arkansas	159	1, 972	8.1
Louisiana	240	3, 663	6.6
Oklahoma	267	2, 516	10.6
Texas	830	10, 858	7.6

Table 73—Continued

Number of licensed optometrists and optometrist/population ratios in each State: 1967—Continued

Geographic division and State	Number of licensed optometrists December 1967	Population [1] July 1, 1967 (thousands)	Rate per 100,000 population
East North Central	4,766	39,189	12.2
Illinois	1,940	10,887	17.8
Indiana	548	5,012	10.9
Michigan	788	8,608	9.2
Ohio	1,032	10,488	9.8
Wisconsin	458	4,194	10.9
West North Central	1,871	16,008	11.7
Iowa	371	2,772	13.4
Kansas	252	2,281	11.0
Minnesota	410	3,625	11.3
Missouri	487	4,587	10.6
Nebraska	178	1,443	12.3
North Dakota	78	632	12.3
South Dakota	95	668	14.2
Mountain	748	7,828	9.6
Arizona	127	1,637	7.8
Colorado	190	2,012	9.4
Idaho	94	701	13.4
Montana	97	699	13.9
Nevada	40	436	9.2
New Mexico	72	1,002	7.2
Utah	88	1,022	8.6
Wyoming	40	319	12.5
Pacific	3,308	25,212	13.1
Alaska	17	271	6.3
California	2,512	18,992	13.2
Hawaii	66	760	8.7
Oregon	313	1,981	15.8
Washington	400	3,208	12.5

---

[1] State figures may not add to totals because of rounding.

[2] Ratio differs from corresponding figure in table 72 (10.3) because population used in that table is as of Dec. 1, 1967 (not available by State).

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 414.

Pharmacy

Pharmacists are licensed in all States and the District of Columbia. To be licensed a candidate must:

1. Graduate from an accredited college of pharmacy.
2. Spend a period of practice (6 months in two States, 1 year in 44 States and the District of Columbia).
3. Pass a State examination (all States and the District of Columbia require both a written and a practical examination, 31 States and the District of Columbia also require an oral examination).

A license obtained in one State is valid through reciprocity agreements in most States.

Schools of pharmacy are accredited by the American Council on Pharmaceutical Education.

Tables 74 and 75

A minimum of 5 years of study after graduation from high school is required for a bachelor's degree from a college of pharmacy. Some colleges of pharmacy offer a program of 6 years of study leading to a degree of Doctor of Pharmacy. Some colleges of pharmacy give the entire 5 or 6 years while others require 2 years of college for admission and give only the 3 or 4 professional years of the program.

In 1967-68 there were 74 accredited colleges of pharmacy with 14,100 students in the professional years and almost 4,000 graduates.

It is estimated that by 1971–72 there will be 16,400 students enrolled in the professional years and 4,760 graduates.

Table 74

Accredited schools of pharmacy, students, and graduates: selected years 1931–32 through 1967–68

Academic year	Number of schools [1]	Number of students		Number of graduates
		Total [2]	Third last year	
1931–32		9,749	...	2,700
1935–36		7,812	...	1,523
1940–41		8,623	...	1,661
1950–51		19,514	...	5,297
1958–59	77	12,273	...	3,686
1959–60	77	12,506	...	3,497
1960–61	77	13,606	5,824	3,438
1961–62	77	10,827	[3] 2,137	3,699
1962–63	77	10,632	4,145	4,163
1963–64	76	10,291	4,390	[3] 2,195
1964–65	[4] 75	11,961	4,427	3,360
1965–66	[5] 74	12,352	4,583	3,659
1966–67	74	13,068	5,173	3,744
1967–68	74	14,122	5,561	3,988

[1] Includes the University of Puerto Rico for which data on students and graduates are not available. Excludes Hampden College, not listed by accrediting body, for 1963–64 through 1967–68.

[2] For 1931–32 through 1950–51 includes total enrollment; for 1958–59 through 1967–68 includes enrollment in last 3 years of pharmacy school.

[3] The small number of students or graduates this year was the result of the transition from a 4- to a 5-year program in 1960 by those schools not already on a 5-year program.

[4] George Washington University School of Pharmacy closed in June 1964.

[5] Loyola University (New Orleans) School of Pharmacy closed in June 1965.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Hearings on Health Manpower Act of 1968 before the subcommittee on Health of the Committee on Labor and Public Welfare, United States Senate. 90th Congress, 2d session. March 20 and 21, 1968.

Report on Enrollment in Schools and Colleges of Pharmacy First Semester, Term, or Quarter, 1967–68. American Journal of Pharmaceutical Education 32: 110–111, February 1968.

Table 75

Estimated number of pharmacy students and graduates: 1968–69 through 1971–72

Academic year	Number of students		Number of graduates	Academic year	Number of students		Number of graduates
	Total [1]	Third last year			Total [1]	Third last year	
1968–69	[2] 14,753	[2] 5,406	4,340	1970–71	15,700	5,900	4,600
1969–70	15,300	5,600	4,700	1971–72	16,400	6,200	4,760

[1] Enrollment in last 3 or 4 years of pharmacy school.

[2] Actual.

Source: American Association of Colleges of Pharmacy. Bureau of Health Professions Education and Manpower Training, Division of Allied Health Manpower.

Table 76 and Figure 11

The 74 accredited colleges of pharmacy in the United States are located in 43 States, the District of Columbia, and Puerto Rico (there are none in Alaska, Delaware, Hawaii, Maine, Nevada, New Hampshire, and Vermont). Six colleges of pharmacy are located in New York State; four each in Ohio and Pennsylvania; three each in California, Michigan, and Texas; 11 States have two each; the rest of the States have one each.

Table 76

Accredited schools of pharmacy, students, and graduates, by State: 1967–68

State and school	Number of students		Number of graduates [2]
	Total [1]	Third last year	
Total [3]	14,122	5,561	3,988
ALABAMA			
Auburn University	223	105	77
Samford University	202	46	60
ARIZONA			
University of Arizona	216	92	61
ARKANSAS			
University of Arkansas	129	47	41
CALIFORNIA			
University of California	241	84	64
University of Southern California	295	99	83
University of the Pacific	199	79	122
COLORADO			
University of Colorado	113	44	27
CONNECTICUT			
University of Connecticut	207	88	43
DISTRICT OF COLUMBIA			
Howard University	108	51	25
FLORIDA			
Florida A. and M. University	63	26	20
University of Florida	231	78	104
GEORGIA			
Mercer University	191	83	34
University of Georgia	393	123	101
IDAHO			
Idaho State University	105	53	37
ILLINOIS			
University of Illinois	373	151	102
INDIANA			
Butler University	105	42	32
Purdue University	312	120	90
IOWA			
Drake University	169	58	58
University of Iowa	176	78	54

Table 76—Continued

Accredited schools of pharmacy, students, and graduates, by State: 1967–68—Continued

State and school	Number of students		Number of graduates[2]
	Total[1]	Third last year	
KANSAS			
University of Kansas	151	60	34
KENTUCKY			
University of Kentucky	152	61	38
LOUISIANA			
Northeast Louisiana State College	394	144	121
Xavier University	48	21	16
MARYLAND			
University of Maryland	143	63	35
MASSACHUSETTS			
Massachusetts College of Pharmacy	323	118	97
Northeastern University	141	52	34
MICHIGAN			
Ferris State College	258	88	79
University of Michigan	101	34	38
Wayne State University	127	54	35
MINNESOTA			
University of Minnesota	258	111	53
MISSISSIPPI			
University of Mississippi	216	90	62
MISSOURI			
St. Louis College of Pharmacy	269	107	69
University of Missouri	126	37	37
MONTANA			
University of Montana	101	31	38
NEBRASKA			
Creighton University	104	33	33
University of Nebraska	180	76	40
NEW JERSEY			
Rutgers, The State University	139	53	41
NEW MEXICO			
University of New Mexico	102	42	32
NEW YORK			
Columbia University	176	73	38
Fordham University	138	51	37
Long Island University, Brooklyn College of Pharmacy	270	98	86
St. John's University	198	65	48
State University of New York at Buffalo	152	71	34
Union University, Albany College of Pharmacy	244	80	84
NORTH CAROLINA			
University of North Carolina	311	145	68
NORTH DAKOTA			
North Dakota State University	244	112	69
OHIO			
Ohio Northern University	90	40	50
Ohio State University	179	74	15
University of Cincinnati	170	77	50
University of Toledo	81	34	23

Table 76—Continued

Accredited schools of pharmacy, students, and graduates, by State: 1967–68—Continued

State and school	Number of students		Number of graduates[2]
	Total[1]	Third last year	
OKLAHOMA			
Southwestern State College	332	135	84
University of Oklahoma	217	74	61
OREGON			
Oregon State University	218	105	46
PENNSYLVANIA			
Duquesne University	99	35	27
Philadelphia College of Pharmacy and Science	317	126	91
Temple University	183	63	32
University of Pittsburgh	154	68	54
PUERTO RICO			
University of Puerto Rico[4]	(152)	(55)	(38)
RHODE ISLAND			
University of Rhode Island	94	29	24
SOUTH CAROLINA			
Medical College of South Carolina	95	36	39
University of South Carolina	133	52	29
SOUTH DAKOTA			
South Dakota State University	171	56	49
TENNESSEE			
University of Tennessee	279	100	85
TEXAS			
Texas Southern University	153	70	33
University of Houston	338	139	103
University of Texas	412	188	121
UTAH			
University of Utah	162	66	47
VIRGINIA			
Medical College of Virginia	210	82	61
WASHINGTON			
University of Washington	204	85	57
Washington State University	123	57	36
WEST VIRGINIA			
West Virginia University	130	53	44
WISCONSIN			
University of Wisconsin	397	171	79
WYOMING			
University of Wyoming	64	29	17

---

[1] Includes regular students enrolled in last 3 years of pharmacy education programs.

[2] Includes only B.S., B. Pharm., and Pharm. D. degrees.

[3] Excludes data on students and degrees conferred for the University of Puerto Rico.

[4] Unpublished data on students from American Association of Colleges of Pharmacy.

Source: Report on Enrollment in Schools and Colleges of Pharmacy First Semester, Term, or Quarter, 1967–68. American Journal of Pharmaceutical Education 32:110–116, February 1968.

Report of Degrees Conferred by Schools and Colleges of Pharmacy for the Academic Year 1967–68. American Association of Colleges of Pharmacy (mimeo).

FIGURE 11.—Schools of pharmacy in the United States: 1968–69.

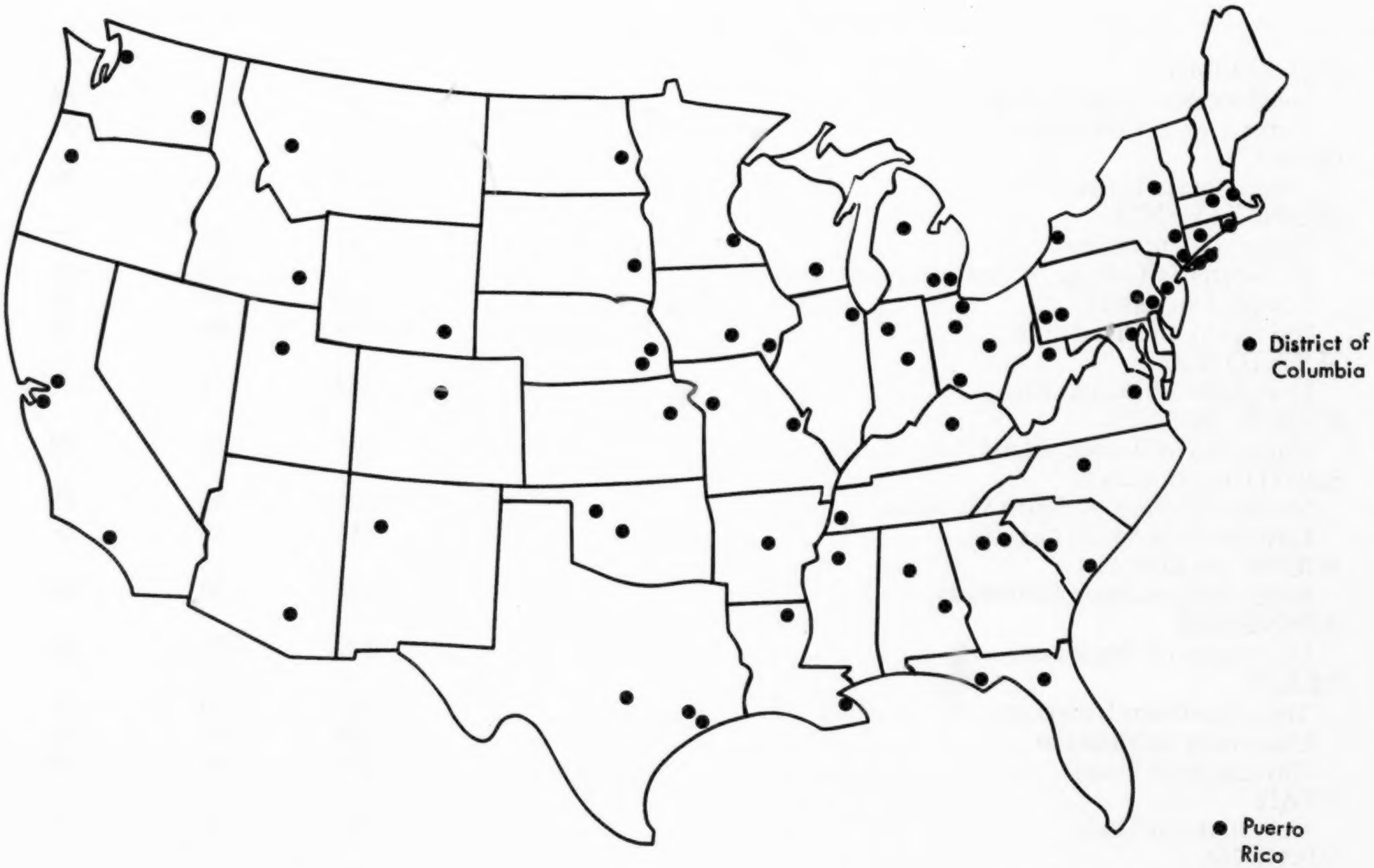

● District of Columbia
● Puerto Rico

Table 77

Data on the number of active pharmacists are available for 1900-60 from the decennial population censuses. This source shows an increase from 46,200 in 1900 to 92,700 in 1960. In relation to population the ratio dropped from 60.7 to 52.2 in the same period. Data for 1962–67 are available from special studies sponsored by the professional association. There were 117,400 licensed pharmacists in practice in the 50 States and the District of Columbia in 1962 and 121,500 in 1967. The ratio to population dropped from 64.6 to 61.6 in the same period.

Table 77

Number of active pharmacists and pharmacist/population ratios: selected years 1900–67

Year [1]	Number of active pharmacists [2]	Population [3] (thousands)	Active pharmacists per 100,000 population	Year [1]	Number of active pharmacists [2]	Population [3] (thousands)	Active pharmacists per 100,000 population
1900	46,159	75,995	60.7	1960	[4] 92,710	177,472	52.2
1910	54,276	91,972	59.0	1962	117,377	182,482	64.3
1920	64,236	105,710	60.8	1965	117,432	190,772	61.6
1930	83,810	122,775	68.3	1966	120,162	192,956	62.6
1940	82,583	131,669	62.7	1967	121,482	194,729	62.4
1950	[4] 89,211	149,634	59.6				

[1] For 1900–1960 data are as of census date; for 1962–67 as of Jan. 1.

[2] Data for 1900–1940 are for economically active civilians in 48 States and the District of Columbia; for 1950 they are experienced civilian labor force in 48 States and the District of Columbia; for 1960, experienced civilian labor force in 50 States and the District of Columbia; for 1962–67 data are for licensed pharmacists in practice in 50 States and the District of Columbia.

[3] Data for 1900–1960 are for civilians; for 1962–67 they include civilian population resident in 50 States and the District of Columbia.

[4] The National Association of Boards of Pharmacy estimates that about 101,100 pharmacists were practicing in the United States in 1950 and 117,000 in 1960.

Source: U.S. Bureau of the Census. Occupational Trends in the United States 1900 to 1950. Working Paper No. 5. Washington, U.S. Department of Commerce, 1958.

U.S. Bureau of the Census. U.S. Census of Population: 1960. Detailed Characteristics. U.S. Summary. Final Report. PC(1)-1D. Washington, U.S. Government Printing Office, 1963.

Peterson, Paul Q. and Pennell, Maryland Y. Health Manpower Source Book 15. Pharmacists. Public Health Service Publication No. 263, Sec. 15. Washington, U.S. Government Printing Office, 1963.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, Health Manpower, 1965. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1966.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

U.S. Bureau of the Census. Statistical Abstract of the United States: 1966. Washington, U.S. Government Printing Office, 1966.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, Nos. 368, 417.

Table 78

Of the 121,500 pharmacists practicing in the United States in 1967, 97,200 were located in community pharmacies. There were 6,700 in hospital pharmacies, 4,500 in manufacturing and wholesale operations, and 4,100 in all other types of practice.

The ratio of active pharmacists to population varied among the States from 27 in Hawaii to 104 per 100,000 population in Massachusetts.

Table 78

Active pharmacists by type of practice and pharmacist/population ratios in each State: 1967

Geographic division and State	Number of active pharmacists[1] as of January 1, 1967: Total	Community pharmacy	Hospital pharmacy	Manufacturing and wholesale	Teaching, government, other	Total active pharmacists per 100,000 population	Civilian population July 1, 1966 (thousands)
All locations[2]	[3] 122,421	97,988	6,734	4,496	4,281	[4] 62.4	196,486
United States	[3] 121,482	97,222	6,715	4,486	4,137	62.7	193,780
New England	9,827	9,002	233	232	360	88.1	11,149
Connecticut	2,498	1,948	136	124	290	87.2	2,866
Maine	434	417	11	6	0	45.1	962
Massachusetts	[5] 5,616	5,616	...	...	...	104.7	5,365
New Hampshire	361	211	40	65	45	53.7	672
Rhode Island	717	622	37	33	25	82.1	873
Vermont	201	188	9	4	0	48.9	411
Middle Atlantic	[3] 26,137	14,704	961	1,170	1,086	71.4	36,595
New Jersey	4,198	3,721	85	239	153	61.3	6,843
New York	13,723	10,983	876	931	933	75.5	18,169
Pennsylvania	[3] 8,216	...	...	...	...	70.9	11,582
South Atlantic	[3] 15,922	13,171	663	676	706	55.9	28,460
Delaware	234	206	13	10	5	46.2	506
District of Columbia	862	682	68	14	98	109.1	790
Florida	4,697	4,204	117	240	136	81.0	5,800
Georgia	2,405	1,895	125	235	150	55.5	4,333
Maryland	2,109	1,922	74	80	33	59.6	3,538
North Carolina	1,876	1,732	100	31	13	38.5	4,870
South Carolina	1,250	1,132	51	28	39	49.8	2,509
Virginia	1,783	1,398	115	38	232	41.4	4,307
West Virginia	[3] 706	...	...	...	...	39.0	1,808
East South Central	6,598	5,818	390	243	147	51.7	12,754
Alabama	1,613	1,344	128	90	51	46.4	3,478
Kentucky	1,560	1,431	84	30	15	49.7	3,136
Mississippi	1,037	934	54	32	17	45.0	2,307
Tennessee	2,388	2,109	124	91	64	62.3	3,833
West South Central	10,701	9,600	539	168	394	57.9	18,492
Arkansas	946	855	65	13	13	48.6	1,946
Louisiana	2,000	1,830	82	60	28	56.0	3,574
Oklahoma	1,972	1,810	58	53	51	80.9	2,434
Texas	5,783	5,105	334	42	302	54.9	10,538

Table 78—Continued

Active pharmacists by type of practice and pharmacist/population ratios in each State: 1967—Continued

Geographic division and State	Number of active pharmacists[1] as of January 1, 1967					Total active pharmacists per 100,000 population	Civilian population July 1, 1966 (thousands)
	Total	Community pharmacy	Hospital pharmacy	Manufacturing and wholesale	Teaching, government, other		
East North Central	22,773	19,476	1,900	903	494	59.0	38,616
Illinois	5,889	4,852	613	272	152	54.9	10,720
Indiana	2,978	2,468	198	240	72	60.3	4,941
Michigan	5,175	4,475	545	110	45	61.3	8,448
Ohio	6,474	5,735	333	214	192	62.6	10,344
Wisconsin	2,257	1,946	211	67	33	54.2	4,163
West North Central	9,509	7,980	665	471	393	60.1	15,818
Iowa	1,621	1,375	106	112	28	58.8	2,759
Kansas	1,326	1,173	85	45	23	59.2	2,240
Minnesota	2,126	1,651	150	81	244	59.6	3,567
Missouri	2,609	2,205	225	160	19	57.7	4,523
Nebraska	1,007	843	55	47	62	70.6	1,426
North Dakota	340	304	21	9	6	53.9	631
South Dakota	480	429	23	17	11	71.3	673
Mountain	5,215	4,557	338	171	149	68.5	7,609
Arizona	992	824	95	29	44	62.7	1,582
Colorado	1,616	1,396	112	67	41	84.3	1,917
Idaho	450	414	18	13	5	64.9	693
Montana	397	354	26	9	8	57.4	692
Nevada	316	290	20	1	5	74.5	424
New Mexico	566	483	30	26	27	57.6	983
Utah	601	531	31	23	16	59.9	1,003
Wyoming	277	265	6	3	3	87.9	315
Pacific	14,800	12,914	1,026	452	408	60.9	24,287
Alaska	86	80	1	5	0	36.9	233
California	10,720	9,510	699	341	170	58.2	18,431
Hawaii	200	177	9	7	7	29.7	673
Oregon	1,509	1,330	89	32	58	76.7	1,968
Washington	2,285	1,817	228	67	173	76.6	2,984
Puerto Rico	918	750	15	10	143	34.6	2,656
Virgin Islands	21	16	4	0	1	42.0	50

---

[1] With current licenses in specified State.

[2] Includes the United States, Puerto Rico, and the Virgin Islands.

[3] Includes pharmacists for whom type of practice is not available.

[4] Ratio differs from corresponding figure in table 77 (62.4) because population used in that table is as of January 1, 1967 (not available by State).

[5] Information on activity status and type of practice incom plete.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968. U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, Nos. 380, 392.

Podiatry

All States and the District of Columbia require a license to practice podiatry (formerly called chiropody). A candidate for licensure must:

1. Graduate from a college of podiatry.

2. Pass a State examination (all States and the District of Columbia require a written test, 29 States and the District of Columbia require an oral examination, and 26 States and the District of Columbia require a practical examination).

Podiatrists may be licensed by reciprocity or endorsement in many States.

Schools of podiatry are accredited by the Council on Education of the American Podiatry Association.

Tables 79 and 80

The study of podiatry requires 6 years after graduation from high school, including 2 years of college and 4 years of training in a college of podiatry.

There were five colleges of podiatry in the United States in 1968 with an enrollment of over 900 students and about 160 graduates. Both enrollments and graduations have increased sharply since 1960.

It is estimated that by 1971–72 there will be over 1,300 students in colleges of podiatry and over 300 annual graduates.

Table 79

Schools of podiatry, students, and graduates: selected years 1951–52 through 1967–68

Academic year	Number of schools	Number of students		Number of graduates
		Total	First year	
1951–52	8	1,633	....	476
1955–56	6	700	....	142
1959–60	5	465	....	112
1960–61	5	478	107	116
1961–62	5	472	120	96
1962–63	4	506	158	113
1963–64	5	560	195	96
1964–65	5	615	177	122
1965–66	5	694	220	136
1966–67	5	807	283	165
1967–68	5	915	295	162

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968. American Podiatry Association, Council on Education. American Association of Colleges of Podiatric Medicine.

Table 80

Estimated number of podiatry students and graduates: 1968–69 through 1971–72

Academic year	Number of students		Number of graduates
	Total	First year	
1968–69	1, 045	328	204
1969–70	1, 140	300	260
1970–71	1, 230	360	270
1971–72	1, 320	360	310

Source: Bureau of Health Professions Education and Manpower Training, Division of Allied Health Manpower.

Table 81 and Figure 12

The five colleges of podiatry in the United States include two in the Middle Atlantic States, two in the East North Central States, and one in California. There are no such schools in the South or between Chicago and the West Coast.

Table 81

Schools of podiatry, students, and graduates, by State: 1967–68

State and school	Number of students		Number of graduates
	Total	First year	
Total	915	295	162
CALIFORNIA			
California College of Podiatric Medicine	176	48	42
ILLIONIS			
Illionis College of Podiatric Medicine	158	59	26
NEW YORK			
M. J. Lewi College of Podiatry	169	51	35
OHIO			
Ohio College of Podiatric Medicine	284	93	37
PENNSYLVANIA			
Pennsylvania College of Podiatric Medicine	128	44	22

Source: American Podiatry Association.

FIGURE 12.—Schools of podiatry in the United States: 1968–69.

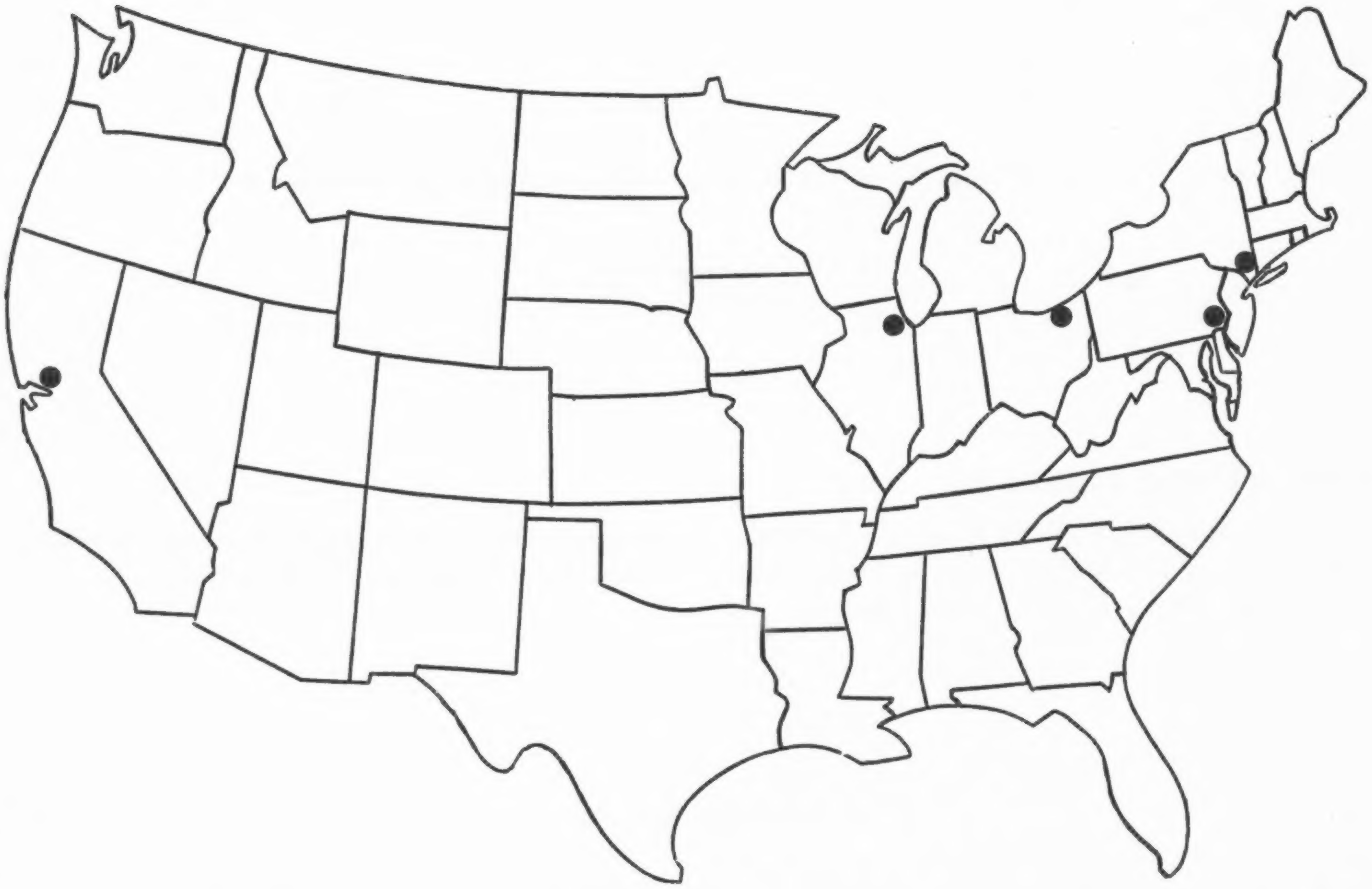


Table 82

There are about 8,000 active podiatrists in the United States, an increase of 25 percent since 1950. However in relation to population the ratio has dropped from 4.2 to 4.0 active podiatrists per 100,000 population in that period.

Table 82

Number of registered podiatrists and podiatrist/population ratios: selected years 1950–67

Year	Number of podiatrists [1]		Population [2] (thousands)	Podiatrists per 100,000 population	
	Total	Active		Total	Active
1950	7, 111	6, 400	151, 684	4.7	4.2
1960	....	7, 000	180, 684	....	3.9
1964	8, 008	7, 600	192, 120	4.2	4.0
1967 [3]	8, 506	8, 000	200, 090	4.3	4.0

[1] For 1950 includes 48 States and the District of Columbia; for 1960–67 includes 50 States and the District of Columbia.

[2] Includes the Armed Forces in the United States and abroad for all years; for 1950 includes civilians in 48 States and the District of Columbia; for 1960–67 includes civilians in 50 States and the District of Columbia. For 1950–64 as of July 1.

[3] As of December.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Bureau of Health Professions Education and Manpower Training, Division of Allied Health Manpower.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P–25, Nos. 368, 417.

Table 83

The ratio of podiatrists to population in 1967 varied from 0.3 podiatrists per 100,000 population in Mississippi to 10.7 in Massachusetts, compared with an average in the United States of 4.3.

Table 83

Number of registered podiatrists and podiatrist/population ratios in each State: 1967

Geographic division and State	Number of podiatrists December 1967	Population July 1, 1967 [1] (thousands)	Rate per 100,000 population
United States	[2] 8,506	197,863	4.3
New England	910	11,344	8.0
Connecticut	194	2,918	6.6
Maine	31	982	3.2
Massachusetts	580	5,434	10.7
New Hampshire	26	691	3.8
Rhode Island	72	901	8.0
Vermont	7	420	1.7
Middle Atlantic	3,099	36,676	8.4
New Jersey	511	6,981	7.3
New York	1,561	18,023	8.7
Pennsylvania	1,027	11,672	8.8
South Atlantic	578	29,583	2.0
Delaware	20	524	3.8
District of Columbia	68	808	8.4
Florida	182	6,035	3.0
Georgia	52	4,490	1.2
Maryland	83	3,680	2.3
North Carolina	52	5,059	1.0
South Carolina	15	2,638	0.6
Virginia	59	4,541	1.3
West Virginia	47	1,807	2.6
East South Central	133	13,014	1.0
Alabama	30	3,533	0.8
Kentucky	59	3,201	1.8
Mississippi	8	2,344	0.3
Tennessee	36	3,936	0.9
West South Central	270	19,009	1.4
Arkansas	20	1,972	1.0
Louisiana	34	3,663	0.9
Oklahoma	49	2,516	1.9
Texas	167	10,858	1.5

Table 83—Continued

Number of registered podiatrists and podiatrist/population ratios in each State: 1967—Continued

Geographic division and State	Number of podiatrists December 1967	Population July 1, 1967 [1] (thousands)	Rate per 100,000 population
East North Central	1,981	39,189	5.1
Illinois	775	10,887	7.1
Indiana	201	5,012	4.0
Michigan	282	8,608	3.3
Ohio	560	10,488	5.3
Wisconsin	163	4,194	3.9
West North Central	412	16,008	2.6
Iowa	103	2,772	3.7
Kansas	52	2,281	2.3
Minnesota	87	3,625	2.4
Missouri	97	4,587	2.1
Nebraska	44	1,443	3.0
North Dakota	11	632	1.7
South Dakota	18	668	2.7
Mountain	206	7,828	2.6
Arizona	39	1,637	2.4
Colorado	75	2,012	3.7
Idaho	20	701	2.9
Montana	12	699	1.7
Nevada	13	436	3.0
New Mexico	23	1,002	2.3
Utah	18	1,022	1.8
Wyoming	6	319	1.9
Pacific	917	25,212	3.6
Alaska	2	271	0.7
California	807	18,992	4.2
Hawaii	4	760	0.5
Oregon	36	1,981	1.8
Washington	68	3,208	2.1

---

[1] State figures may not add to totals because of rounding.

[2] About 8,000 are estimated to be active.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 414.

Veterinary Medicine

Veterinarians are licensed in all States and the District of Columbia. The requirements for licensure include:

1. Graduation from an approved school of veterinary medicine.
2. Passing a State examination (49 States require a written test, 46 an oral examination, 29 a practical test, and the District of Columbia requires all three).

Licenses are issued by reciprocity or endorsement in most States.

Schools of veterinary medicine are accredited by the Council on Education of the American Veterinary Medical Association.

Tables 84 and 85

Education in veterinary medicine requires a minimum of 6 years beyond high school, including 4 years in an approved school of veterinary medicine.

There were 18 approved schools of veterinary medicine in 1967–68 with an enrollment of over 4,600 students and some 1,060 graduates.

It is estimated that by 1971–72 there will be about 5,000 students and about 1,200 graduates from schools of veterinary medicine.

Table 84

Schools of veterinary medicine, students, and graduates: selected years 1937–38 through 1967–68

Academic year	Number of schools	Number of students		Number of graduates [1]
		Total	First year	
1937–38	10	1,876	...	...
1946–47	10	1,725	...	...
1949–50	17	3,132	...	695
1954–55	17	3,419	...	817
1959–60	18	3,464	...	826
1960–61	18	3,497	983	824
1961–62	18	3,528	1,001	819
1962–63	18	3,632	1,044	830
1963–64	18	3,727	1,059	834
1964–65	18	3,874	1,147	877
1965–66	18	4,119	1,242	910
1966–67	18	4,388	1,305	963
1967–68	18	4,623	1,315	1,064

[1] Senior students.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

American Veterinary Medical Association.

Table 85

Estimated number of veterinary medical students and graduates: 1968–69 through 1971–72

Academic year	Number of students		Number of graduates [1]
	Total	First year	
1968–69 [2]	4,779	1,327	1,129
1969–70	4,860	1,340	1,150
1970–71	4,970	1,390	1,220
1971–72	5,000	1,390	1,200

[1] Senior students.

[2] Actual.

Source: Bureau of Health Professions Education and Manpower Training, Division of Allied Health Manpower.

American Veterinary Medical Association.

Table 86 and Figure 13

The 18 schools of veterinary medicine in the United States in 1968 were located in 17 States, Alabama being the only State with two schools. New England is the only geographic division without a school of veterinary medicine. The East and West North Central divisions each have four schools, the Middle Atlantic, West South Central, and Pacific divisions have two schools each, and the other three divisions have one school each.

Table 86

Schools of veterinary medicine, students, and graduates, by State: 1968–69

State and school	Number of students		Number of graduates [1]
	Total	First year	
Total	4,779	1,327	1,129
ALABAMA			
Auburn University	386	101	90
Tuskegee Institute	120	38	30
CALIFORNIA			
University of California, Davis	307	80	70
COLORADO			
Colorado State University	286	80	60
GEORGIA			
University of Georgia	247	64	58
ILLINOIS			
University of Illinois	273	74	70
INDIANA			
Purdue University	226	60	52
IOWA			
Iowa State University	291	75	65
KANSAS			
Kansas State University	315	80	75
MICHIGAN			
Michigan State University	277	100	45
MINNESOTA			
University of Minnesota	239	65	60
MISSOURI			
University of Missouri	220	60	47
NEW YORK			
State University of New York at Cornell	231	60	58
OHIO			
Ohio State University	317	85	73
OKLAHOMA			
Oklahoma State University	183	49	41
PENNSYLVANIA			
University of Pennsylvania	290	78	65
TEXAS			
Texas A. and M. University	380	128	123
WASHINGTON			
Washington State University	191	50	47

[1] 4th-year students.

Source: Unpublished data from the American Veterinary Medical Association.

FIGURE 13.—Schools of veterinary medicine in the United States: 1968–69.

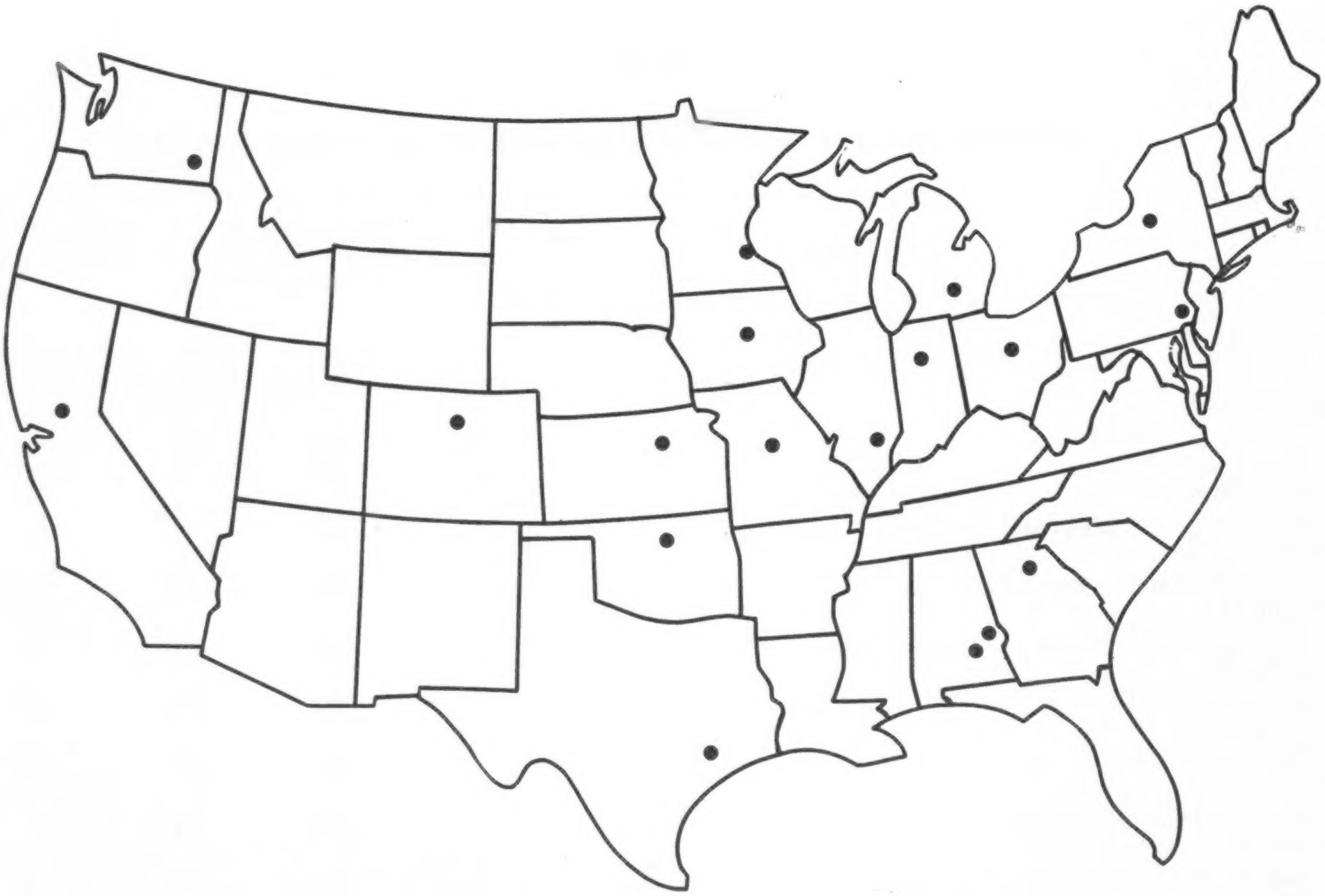


Table 87

Data on veterinarians for 1930–50 are from the decennial population censuses and are not comparable with data for later years from the professional association. Census information on occupations with small numbers of workers tend to be less accurate than information from professional associations. There is reason to believe that census enumerators fail to distinguish in some cases among the various categories of doctors (M.D., D.O., D.D.S., D.V.M., etc.).

There were 11.7 active veterinarians per 100,000 persons in 1968 compared with 10.5 in 1960.

Table 87

Number of veterinarians and veterinarian/population ratios: selected years 1930–68

Year	Number of veterinarians [1]		Population [3] (thousands)	Veterinarians per 100,000 population	
	Total	Active [2]		Total	Active
1930		11,863	122,775	....	9.7
1940		11,068	131,669	....	8.4
1950	15,760	13,522	150,697	10.5	9.0
1960 [4]	20,200	19,200	182,326	11.1	10.5
1965 [4]	23,672	(5)	193,483	12.2	....
1968 [4]	25,466	[6] 24,200	200,248	12.7	12.1

[1] For 1930–50 includes 48 States and the District of Columbia; for 1960–68 includes 50 States and the District of Columbia.

[2] For 1930–40 data are for economically active civilians, for 1950 for experienced civilian labor force—all from population censuses. Data for 1968 include Federal and non-Federal veterinarians.

[3] For 1930–50 includes resident population as of census date in 48 States and the District of Columbia; for 1960–68 includes the Armed Forces in the United States and abroad and civilians in 50 States and the District of Columbia as of Jan. 1.

[4] As of Jan. 1.

[5] A total of 5,294 veterinarians were reported as retired, not in practice, or status not reported.

[6] Estimated as 95 percent of total.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, Health Manpower, 1965. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1966.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

U.S. Bureau of the Census. Occupational Trends in the United States 1900–1950. Working Paper No. 5. Washington, U.S. Department of Commerce, 1958.

U.S. Bureau of the Census. Statistical Abstract of the United States: 1966. Washington, U.S. Government Printing Office, 1966.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 417.

Bureau of Health Professions Education and Manpower Training, Division of Allied Health Manpower.

Table 88

Two-thirds of the active veterinarians in 1968 were in private practice. Of the remaining 7,300 veterinarians with known type of practice the majority were in laboratories, teaching, administration, research, and industry.

Table 88

Number of active veterinarians, by type of practice: January 1968

Type of practice	Number of veterinarians	Percent distribution
Total active	24, 200	100.0
Private practice	16, 065	66.4
Large animal	1, 760	7.3
Small animal	5, 788	23.9
Mixed	8, 517	35.2
Other practice	7, 268	30.0
Regulatory [1]	1, 734	7.1
Public health [2]	485	2.0
Military	816	3.4
Other [3]	4, 233	17.5
Type of practice not reported	[4] 867	3.6

[1] Includes inspectors of livestock, meat, poultry, and virus serum.

[2] Includes milk and dairy specialists and food and establishment inspectors.

[3] Includes laboratory services, teaching, administration, research, industry, etc.

[4] Figure adjusted to conform to estimate of total active.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Bureau of Health Professions Education and Manpower Training, Division of Allied Health Manpower.

Table 89

The largest numbers of veterinarians in the geographic divisions of the United States were in the East and West North Central States, the fewest were in New England. California accounted for almost 10 percent of all veterinarians in the country.

Table 89

Number of veterinarians in each State: January 1968

Geographic division and State	Number of veterinarians
United States	25,466
New England	901
Connecticut	231
Maine	101
Massachusetts	358
New Hampshire	81
Rhode Island	42
Vermont	88
Middle Atlantic	3,095
New Jersey	526
New York	1,572
Pennsylvania	997
South Atlantic	3,324
Delaware	72
District of Columbia	117
Florida	756
Georgia	591
Maryland	599
North Carolina	389
South Carolina	193
Virginia	515
West Virginia	92
East South Central	1,317
Alabama	430
Kentucky	338
Mississippi	204
Tennessee	345
West South Central	2,410
Arkansas	212
Louisiana	289
Oklahoma	415
Texas	1,494
East North Central	5,080
Illinois	1,352
Indiana	852
Michigan	930
Ohio	1,278
Wisconsin	668
West North Central	4,300
Iowa	1,288
Kansas	611
Minnesota	794
Missouri	781
Nebraska	492
North Dakota	104
South Dakota	230
Mountain	1,593
Arizona	222
Colorado	566
Idaho	163
Montana	192
Nevada	75
New Mexico	149
Utah	141
Wyoming	85
Pacific	3,446
Alaska	17
California	2,446
Hawaii	53
Oregon	316
Washington	614

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Nursing

All States and the District of Columbia license professional nurses under the title "registered nurse" (R.N.). In eight States and the District of Columbia licensing is voluntary, authorizing the use of the title only. The requirements for licensure include:

1. Graduation from a school of nursing approved by the State board of nursing. Two States and the District of Columbia require a minimum of 28 to 36 months of education beyond high school; 31 States require 2 years; the rest of the States have no requirement on length of program.
2. Successful completion of a State written examination.

Nursing schools are approved by the State boards of nursing. The National League for Nursing is the national accrediting agency for basic nursing education programs. National accreditation is voluntary.

Table 90

Nursing education began in this country in 1873 with the opening of three schools. These schools offered students an opportunity to learn by doing, under the tutorship for 1 year of a superintendent who had been trained in one of the European schools. Even though these programs did not meet today's standards, they improved patient care so dramatically that hospitals pushed the opening of new schools and increased the number of students enrolled. The course was lengthened to 2 years to make it possible to retain students an additional year as head nurses.

By 1893 about 70 schools were in operation. The earliest counts of schools of nursing and their enrollments are in the annual reports of the U.S. Commissioner of Education, dating back to 1880. As State licensing bodies came into existence, counts of State approved schools and their students began to be available. Since only graduates of State approved schools could take licensure examinations, nonapproved schools tended to close as the effect of licensure became felt. By 1923 machinery for approving schools was in operation in every State.

The number of nursing schools reached a peak of 1,844 in 1931 and then declined throughout the 1930's and 1940's. The number of students increased steadily until 1931, dropped sharply in the early 1930's, but by 1940 was again increasing. During World War II, under the stimulus of the Cadet Nurse Program, enrollments rose to nearly 129,000 in January 1946; graduates reached a peak of over 40,700 in 1947. After the war enrollments and graduates again dropped.

Table 90

Nursing schools, students, and graduates: selected years 1880–1948

Academic year ending	Number of schools	Number of students	Number of graduates
1880	15	323	157
1890	35	1,552	471
1900	432	11,164	3,456
1910	1,129	32,636	8,140
1920	1,755	54,953	14,980
1927	1,797	77,768	18,623
1931	1,844	100,419	25,971
1935	1,472	67,533	19,600
1940	1,311	85,156	23,600
1945	1,295	126,576	31,721
1948	1,245	91,643	34,268

Source: U.S. Bureau of the Census. Historical Statistics of the United States, Colonial Times to 1957. Washington, U.S. Government Printing Office, 1960.

Table 91

Today there are three types of educational programs which prepare nurses for licensure as registered professional nurses: the 3-year hospital program leading to a diploma, the 4-year college or university program leading to a baccalaureate, and the 2-year junior college program leading to an associate degree.

Between 1954 and 1961 the number of nursing programs decreased by over 100. Since then there has been a slow increase to 1,293 for the academic year 1968-69. Diploma programs have declined steadily while baccalaureate and associate degree programs have increased. By 1966-67 the number of associate degree programs exceeded the number of baccalaureate programs.

Enrollments have increased steadily to about 145,000 in 1968-69. Admissions decreased in 1966-67 from the previous year but increased to over 61,000 in 1967-68. Graduations declined in 1964-65 but have increased again since that year.

Table 91

Nursing programs, students, admissions, and graduates, by type of program: selected years 1949-68

Year	Total [1]	Baccalaureate	Associate degree	Diploma
Programs: [2]				
1949	[3] 1,237			
1954	1,237	215	30	992
1959	1,137	171	48	918
1960	1,137	172	57	908
1961	1,126	174	69	883
1962	1,136	178	84	874
1963	1,148	183	105	860
1964	1,158	188	130	840
1965	1,193	198	174	821
1966	1,225	210	218	797
1967	1,269	221	281	767
1968	1,293	235	330	728
Students: [2]				
1949	88,817	6,635		82,182
1954	102,853	14,488	1,463	86,902
1959	115,057	19,813	2,345	92,899
1960	118,849	20,783	3,254	94,812
1961	123,012	22,546	3,860	96,606
1962	123,861	23,656	4,927	95,278
1963	124,744	25,117	6,356	93,271
1964	129,269	27,667	8,513	93,089
1965	135,702	30,378	11,564	93,760
1966	139,070	33,081	15,338	90,651
1967	141,948	36,599	20,936	84,413
1968	145,588	40,341	27,471	77,776

Academic year	Total [1]	Baccalaureate	Associate degree	Diploma
Admissions: [4]				
1949	43,612			
1954	44,864	6,017	741	38,106
1959-60	49,166	7,555	1,598	40,013
1960-61	49,487	8,700	2,085	38,702
1961-62	49,805	9,044	2,504	38,257
1962-63	49,521	9,597	3,490	36,434
1963-64	52,667	10,270	4,461	37,936
1964-65	57,604	11,835	6,160	39,609
1965-66	60,701	13,159	8,638	38,904
1966-67	58,700	14,070	11,347	33,283
1967-68	61,389	14,891	14,870	31,628
Graduations: [4]				
1949	21,379			
1954	28,539	2,398	344	25,797
1959-60	30,113	4,136	789	25,188
1960-61	30,267	4,039	917	25,311
1961-62	31,186	4,300	1,159	25,727
1962-63	32,398	4,481	1,479	26,438
1963-64	35,259	5,059	1,962	28,238
1964-65	34,686	5,381	2,510	26,795
1965-66	35,125	5,498	3,349	26,278
1966-67	38,237	6,131	4,654	27,452
1967-68	41,555	7,145	6,213	28,197

---

[1] Includes 50 States, the District of Columbia, and Puerto Rico.

[2] Prior to 1955 as of Jan. 1, since 1955 as of Oct. 15.

[3] Some schools offer more than 1 program; the number of schools in 1949 was 1,215.

[4] Prior to 1955 for calendar year, since 1955 for academic year Sept. 1 through Aug. 31.

Source: American Nurses' Association. Facts About Nursing: A Statistical Summary. New York, The Association, 1959 and 1969 editions.

Table 92 and Figure 14

It is estimated that the total number of nursing programs will increase to 1,385 by Oct. 1974. The diploma programs are expected to continue to decline while the other two types of programs continue to increase. By 1970, the number of baccalaureate and associate degree programs together will exceed the number of diploma programs for the first time.

By 1974 it is estimated that enrollments will reach 168,000 with 73,000 admissions and 43,400 graduations that year.

Table 92

Estimated nursing programs, students, admissions, and graduates, by type of program: 1968–69 through 1974–75

Year	Total	Baccalaureate	Associate degree	Diploma
Programs:[1]				
1969	1, 310	240	375	695
1970	1, 325	245	420	660
1971	1, 340	250	460	630
1972	1, 355	255	500	600
1973	1, 370	260	535	575
1974	1, 385	265	570	550
Students:[1]				
1969	150, 000	43, 000	32, 800	74, 200
1970	154, 000	45, 600	35, 800	72, 600
1971	158, 000	48, 200	40, 500	69, 300
1972	161, 000	51, 800	44, 900	64, 300
1973	164, 000	55, 400	49, 000	59, 600
1974	168, 000	59, 100	53, 000	55, 900

Academic year	Total	Baccalaureate	Associate degree	Diploma
Admissions:				
1968–69	63, 000	15, 800	17, 100	30, 100
1969–70	65, 000	17, 000	19, 300	28, 700
1970–71	67, 000	18, 200	21, 700	27, 100
1971–72	69, 000	19, 400	24, 100	25, 500
1972–73	70, 000	20, 400	26, 300	23, 300
1973–74	71, 000	21, 400	28, 500	21, 100
1974–75	73, 000	22, 700	31, 200	19, 100
Graduates:				
1968–69	40, 000	7, 800	8, 200	24, 000
1969–70	40, 800	8, 300	9, 700	22, 800
1970–71	41, 000	8, 800	10, 600	21, 600
1971–72	41, 800	9, 300	12, 000	20, 500
1972–73	42, 300	10, 000	13, 300	19, 000
1973–74	43, 000	10, 700	14, 500	17, 800
1974–75	43, 400	11, 400	15, 700	16, 300

[1] As of Oct. 15.

Source: Bureau of Health Professions Education and Manpower Training, Division of Nursing.

FIGURE 14.—Admissions to schools of nursing by type of program: 1950–74.

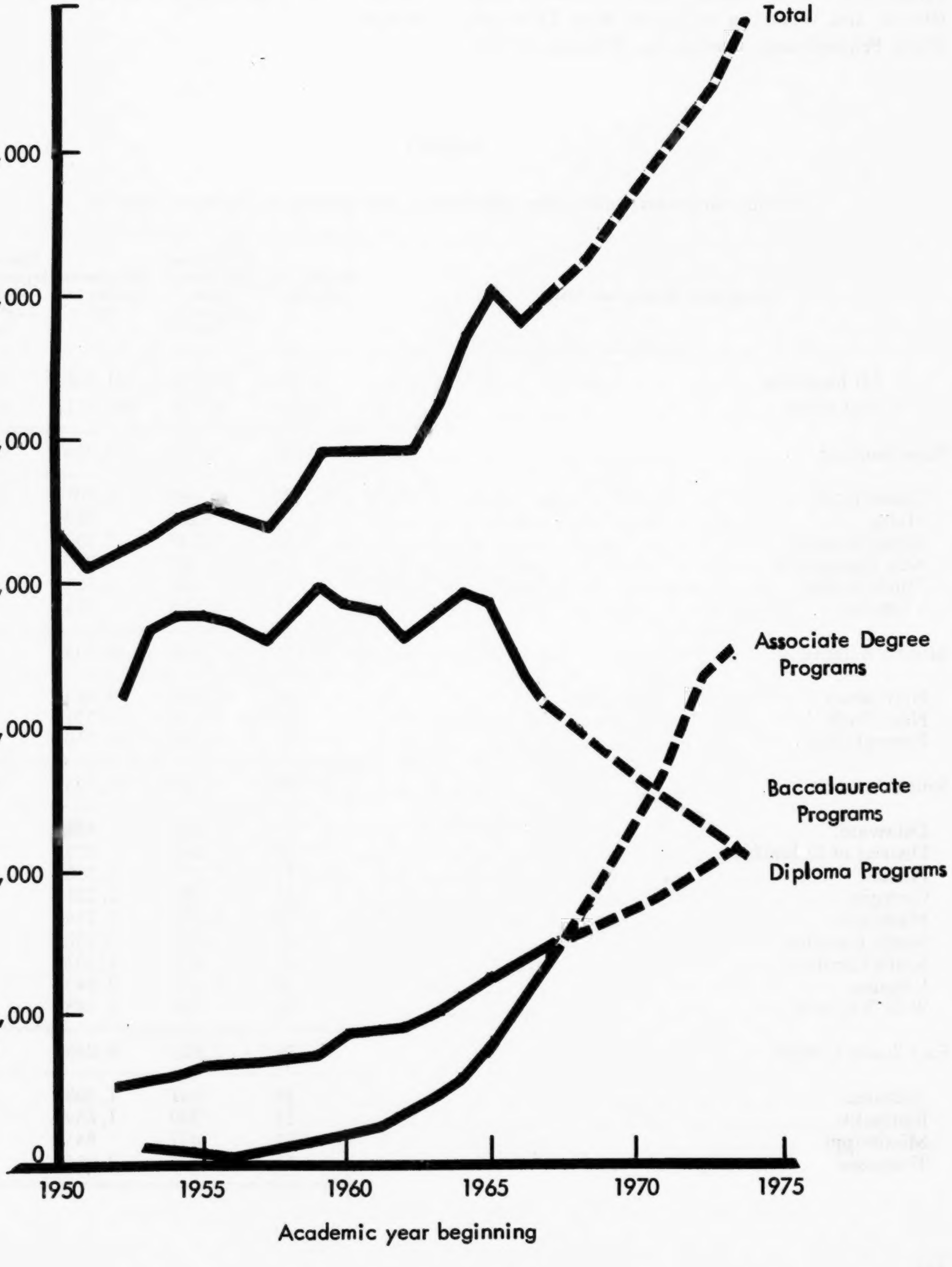


Table 93

The number of nursing programs in October 1968 varied from one in Alaska, Guam, Hawaii, Virgin Islands, and Wyoming to 138 in New York and 113 in Pennsylvania. Among the 50 States, 17 had less than 10 programs, 12 had 10–19 programs, 11 had 20–29 programs, and 12 had 30 programs or more.

Table 93

Nursing programs, admissions, enrollment, and graduates, by State: 1966–67

Geographic division and State	Number of programs	Admissions September 1, 1966–August 31, 1967	Enrollment October 15, 1967	Graduates September 1, 1966–August 31, 1967
All locations[1]	1, 269	58, 700	141, 948	38, 237
United States	1, 254	58, 021	140, 631	37, 931
New England	109	4, 972	13, 464	3, 743
Connecticut	20	1, 018	2, 701	795
Maine	7	266	688	189
Massachusetts	59	2, 744	7, 550	2, 146
New Hampshire	10	287	763	222
Rhode Island	8	452	1, 191	278
Vermont	5	205	571	113
Middle Atlantic	293	13, 936	34, 733	9, 868
New Jersey	44	1, 674	4, 243	1, 294
New York	138	7, 173	16, 771	4, 727
Pennsylvania	111	5, 089	13, 719	3, 847
South Atlantic	184	7, 663	17, 725	4, 662
Delaware	6	183	462	70
District of Columbia	6	245	875	230
Florida	25	1, 571	2, 710	809
Georgia	23	833	2, 221	672
Maryland	28	1, 376	3, 134	773
North Carolina	38	1, 332	3, 330	793
South Carolina	10	457	1, 102	315
Virginia	32	1, 137	2, 643	633
West Virginia	16	529	1, 248	367
East South Central	79	2, 623	6, 046	1, 492
Alabama	16	591	1, 508	333
Kentucky	23	790	1, 659	472
Mississippi	17	433	843	207
Tennessee	23	809	2, 036	480

Table 93—Continued

Nursing programs, admissions, enrollment, and graduates, by State: 1966–67—Continued

Geographic division and State	Number of programs	Admissions September 1, 1966–August 31, 1967	Enrollment October 15, 1967	Graduates September 1, 1966–August 31, 1967
West South Central	74	3, 314	7, 408	1, 618
Arkansas	6	310	517	130
Lousiana	15	862	1, 995	353
Oklahoma	12	446	812	276
Texas	41	1, 696	4, 084	859
East North Central	234	11, 603	28, 865	8, 231
Illinois	75	3, 092	7, 659	2, 336
Indiana	29	1, 562	3, 431	973
Michigan	40	2, 454	5, 666	1, 463
Ohio	65	3, 059	8, 459	2, 562
Wisconsin	25	1, 436	3, 650	897
West North Central	136	5, 995	15, 484	4, 351
Iowa	22	1, 009	2, 551	714
Kansas	20	480	1, 501	518
Minnesota	27	1, 489	3, 917	1, 176
Missouri	32	1, 580	3, 655	939
Nebraska	14	694	1, 818	484
North Dakota	10	281	914	274
South Dakota	11	462	1, 128	246
Mountain	44	2, 484	4, 975	991
Arizona	8	631	1, 232	193
Colorado	12	708	1, 439	277
Idaho	5	226	292	65
Montana	6	282	690	159
Nevada	2	116	223	39
New Mexico	3	94	291	32
Utah	7	365	662	204
Wyoming	1	62	146	22
Pacific	101	5, 431	11, 931	2, 975
Alaska	0			
California	73	3, 866	8, 292	2, 065
Hawaii	3	75	258	93
Oregon	6	439	1, 102	276
Washington	19	1, 051	2, 279	541
Guam	1	27	37	0
Puerto Rico	13	632	1, 251	306
Virgin Islands	1	20	29	0

---

[1] Includes the United States, Guam, Puerto Rico, and the Virgin Islands.

Source: National League for Nursing. State-Approved Schools of Nursing—R.N. New York, The League, 1968 edition.

Table 94

Although admissions to nursing schools increased from 43,500 to 61,300 between 1949 and 1967, they declined in relation to the pool of young women from which most nursing students are drawn. Nursing school admissions per 100 17-year old females declined from 4.0 to 3.5 in that period. In relation to female high school graduates the decline was from 6.7 in 1954 to 4.5 in 1967-68.

Table 94

Nursing school admissions in relation to young people and to high school graduates: selected years 1949 through 1967–68

Year	Nursing school admissions [1]	Females		Nursing school admissions per 100	
		17-year olds [2]	High school graduates [3]	17-year old females	Female high school graduates
1949	43, 500	1, 076, 000	628, 000	4.0	6.9
1954	44, 701	1, 066, 000	667, 000	4.2	6.7
1959–60	48, 919	1, 280, 000	849, 900	3.8	5.8
1960–61	49, 219	1, 449, 000	966, 000	3.4	5.1
1961–62	49, 506	1, 367, 000	1, 013, 000	3.6	4.9
1962–63	49, 228	1, 371, 000	984, 000	3.6	5.0
1963–64	52, 274	1, 365, 000	991, 000	3.8	5.3
1964–65	57, 180	1, 840, 000	1, 167, 000	3.1	4.9
1965–66	60, 191	1, 732, 000	1, 337, 000	3.5	4.5
1966–67	58, 021	1, 735, 000	1, 319, 000	3.3	4.4
1967–68	60, 673	1, 722, 000	1, 344, 000	3.5	4.5

---

[1] Prior to 1955 admissions for calendar year, since 1955 for academic year Sept. 1 through Aug. 31. Excludes Puerto Rico all years.

[2] Estimates as of July 1, 1949, 1954, 1959, etc.

[3] For academic year preceding admission to nursing school.

Source: American Nurses' Association. Facts About Nursing: A Statistical Summary. New York, The Association, 1965 and 1967 editions.

National League for Nursing. State-Approved Schools of Nursing—R.N. New York, The League, 1968 edition.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P–25, Nos. 311, 314, 385.

Table 95

The figures for 1910–40 are from the decennial population censuses and were obtained by subtracting the number of student nurses (known from other sources) from the census figures which included student nurses. Data for these years are for civilian "gainful workers."

For 1949, 1951, 1957, 1962, and 1966 the data are based on inventories of professional registered nurses compiled by the American Nurses' Association from questionnaires distributed by State boards of nursing. The other nursing figures were prepared by the Interagency Conference on Nursing Statistics (consisting of representatives of the American Nurses' Association, the National League for Nursing, and the U.S. Public Health Service). Both sets of figures include nurses in the military services stationed in the United States.

The ratio of active nurses to population has increased from 55 nurses per 100,000 population in 1910 to 201 in 1949 and 331 in 1968.

Table 95

Number of nurses and nurse/population ratios: selected years 1910–68

Year [1]	Number of nurses	Resident population (thousands)	Nurses per 100,000 population	Number of active nurses	Active nurses per 100,000 population
1910		92, 407		[2] 50, 500	55
1920		106, 466		[2] 103, 900	98
1930		123, 077		[2] 214, 300	174
1940		131, 954		[2] 284, 200	215
1949	[3] 504, 238	148, 665	339	[3] 299, 067	201
1951	[3] 554, 844	153, 383	362	[3] 333, 268	217
1954		161, 191		[4] 401, 600	249
1956		167, 259		[4] 430, 000	257
1957	[3] 734, 402	170, 295	431	[3] 464, 138	273
1958		173, 239		[4] 460, 000	266
1960		179, 107		[4] 504, 000	281
1962		184, 598		[4] 550, 000	298
1962	[3] 847, 531	185, 890	456	[3] 552, 894	297
1964		190, 176		[4] 582, 000	306
1966		194, 972		[4] 621, 000	319
1966	[3] 909, 131	195, 936	464	[3] 613, 188	313
1967		196, 967		[4] 640, 000	325
1968		199, 017		[4] 659, 000	331

[1] For 1910–60 includes 48 States and the District of Columbia; for 1962–68 includes 50 States and the District of Columbia.

[2] Bureau of the Census figure adjusted to exclude student nurses.

[3] Inventory data collected over the registration period in the States.

[4] Estimate as of Jan. 1, made by the Interagency Conference on Nursing Statistics.

Source: American Nurses' Association. Facts About Nursing: A Statistical Summary. New York, The Association, 1968 edition.

U.S. Department of Health, Education, and Welfare; Public Health Service; Division of Nursing. Health Manpower Source Book 2. Nursing Personnel. Public Health Service Publication No. 263, Sec. 2 (revised). Washington, U.S. Government Printing Office, 1969.

U.S. Department of Health, Education, and Welfare; Public Health Service; Division of Public Health Methods. Health Manpower Source Book 9. Physicians, Dentists, and Professional Nurses. Public Health Service Publication No. 263, Sec. 9. Washington, U.S. Government Printing Office, 1959.

U.S. Bureau of the Census. Population Estimates. Current Population Reports. Series P–25, Nos. 229, 239, 389.

Table 96

The number of nurses employed in the Federal Government includes both members of the three military nurse corps and civilian nurses in Federal Government agencies. The Veterans Administration with 15,800 nurses in 1967 is the largest Federal employer of nurses.

Table 96

Active nurses, Federal and non-Federal: selected years 1949–68

Year [1]	Active nurses [2]	Federal	Non-Federal
1949	299,067	24,990	274,077
1951	333,268	29,727	303,541
1957	464,138	29,386	434,752
1962	550,000	31,309	518,691
1964	582,000	30,799	551,201
1966	621,000	32,781	588,219
1967	640,000	34,932	605,068
1968	659,000	....	....

[1] For 1949–57 figures are inventory data collected over the registration period in the States; for 1962–68 figures are estimates as of Jan. 1, made by the Interagency Conference on Nursing Statistics.

[2] Includes Alaska and Hawaii beginning in 1962.

Source: American Nurses' Association. Facts About Nursing: A Statistical Summary. New York, The Association, 1968 edition and previous annual publications.

Table 97

Five inventories of registered nurses have been compiled by the American Nurses' Association. The 1949 and 1951 inventories were based on special questionnaire surveys, and the data shown in the table are estimates of the total number of active nurses obtained by adjusting the returns for nonresponse. The figures for 1957, 1962, and 1966 include only those nurses who reported themselves active when they applied for their licenses, new or renewal, during the time of the inventories. The figures also exclude the following numbers who did not respond to the question on activity status: 1957—38,430, 1962—32,594, 1966—29,646.

The total number of active nurses increased over 110 percent between 1949 and 1967, from 299,100 to 640,000. The number of nurses employed in hospitals, related institutions, and nursing homes increased from 141,300 to 431,000 or over 200 percent during the same period.

Table 97

Active nurses by field of practice: selected years, 1949–66

Year	Total	Hospital [1]	Public health [2]	Occupational health	Nursing education	Private duty	Office	Other	Field not reported
1949..........	299, 067	141, 266	28, 487	13, 056	12, 036	64, 915	26, 381	1, 368	11, 558
1951..........	333, 268	162, 211	29, 372	14, 234	12, 143	69, 780	28, 163	1, 787	15, 578
1957..........	464, 138	275, 047	33, 145	17, 538	13, 679	69, 530	36, 929	4, 892	13, 378
1962..........	532, 118	335, 404	40, 687	17, 569	16, 294	64, 155	43, 558	2, 496	11, 955
1966..........	593, 694	387, 847	46, 349	18, 155	20, 818	57, 193	47, 628	1, 885	13, 819

---

[1] Includes related institutions and nursing homes.

[2] Includes school nurses.

Sources: U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Nursing. Health Manpower Source Book 2. Nursing Personnel (revised January 1966). Public Health Service Publication No. 263, Sec. 2. Washington, U.S. Government Printing Office, 1966.

American Nurses' Association, Research and Statistics Department. 1966 Inventory of Registered Nurses.

Table 98 and Figure 15

In 1966, there were 313 active registered nurses per 100,000 resident population in the United States. This ratio varied from a low of 133 per 100,000 in Arkansas to 537 per 100,000 in Connecticut.

Table 98

Number of active nurses and nurse/population ratios in each State: 1966

Geographic division and State	Number of active nurses	Resident population July 1, 1966 [1] (thousands)	Active nurses per 100,000 resident population
United States	613, 188	195, 936	313
New England	57, 262	11, 244	509
Connecticut	15, 438	2, 878	536
Maine	4, 051	978	414
Massachusetts	28, 743	5, 403	532
New Hampshire	3, 521	676	521
Rhode Island	3, 673	898	409
Vermont	1, 836	411	447
Middle Atlantic	145, 031	36, 705	395
New Jersey	24, 942	6, 899	362
New York	74, 280	18, 205	408
Pennsylvania	45, 809	11, 601	395
South Atlantic	78, 450	29, 105	270
Delaware	2, 098	513	409
District of Columbia	3, 662	806	454
Florida	21, 760	5, 893	369
Georgia	6, 956	4, 445	156
Maryland	10, 005	3, 611	277
North Carolina	12, 126	4, 974	244
South Carolina	5, 625	2, 589	217
Virginia	11, 511	4, 465	258
West Virginia	4, 707	1, 809	260
East South Central	22, 634	12, 895	176
Alabama	5, 912	3, 511	168
Kentucky	6, 297	3, 181	198
Mississippi	3, 670	2, 337	157
Tennessee	6, 755	3, 866	175
West South Central	34, 184	18, 797	182
Arkansas	2, 609	1, 956	133
Louisiana	6, 758	3, 617	187
Oklahoma	4, 650	2, 477	188
Texas	20, 167	10, 747	188

Table 98—Continued

Number of active nurses and nurse/population ratios in each State: 1966—Continued

Geographic division and State	Number of active nurses	Resident population July 1, 1966 [1] (thousands)	Active nurse per 100,000 resident population
East North Central	118, 555	38, 736	306
Illinois	35, 552	10, 786	330
Indiana	12, 829	4, 951	259
Michigan	23, 441	8, 468	277
Ohio	32, 649	10, 364	315
Wisconsin	14, 084	4, 167	338
West North Central	51, 541	15, 932	324
Iowa	9, 981	2, 760	362
Kansas	6, 895	2, 275	303
Minnesota	14, 441	3, 572	404
Missouri	11, 291	4, 564	247
Nebraska	4, 730	1, 439	329
North Dakota	2, 114	643	329
South Dakota	2, 089	679	308
Mountain	25, 738	7, 716	334
Arizona	5, 862	1, 603	366
Colorado	8, 312	1, 955	425
Idaho	1, 954	697	280
Montana	2, 483	702	354
Nevada	1, 060	431	246
New Mexico	2, 511	1, 002	251
Utah	2, 347	1, 007	233
Wyoming	1, 209	319	379
Pacific	79, 793	24, 807	322
Alaska	590	265	223
California	58, 694	18, 802	312
Hawaii	2, 334	727	321
Oregon	6, 814	1, 973	345
Washington	11, 361	3, 040	374

---

[1] Figures may not add to totals because of rounding.

Source: American Nurses' Association. Facts About Nursing: A Statistical Summary. New York, The Association, 1968 edition.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P-25, No. 380.

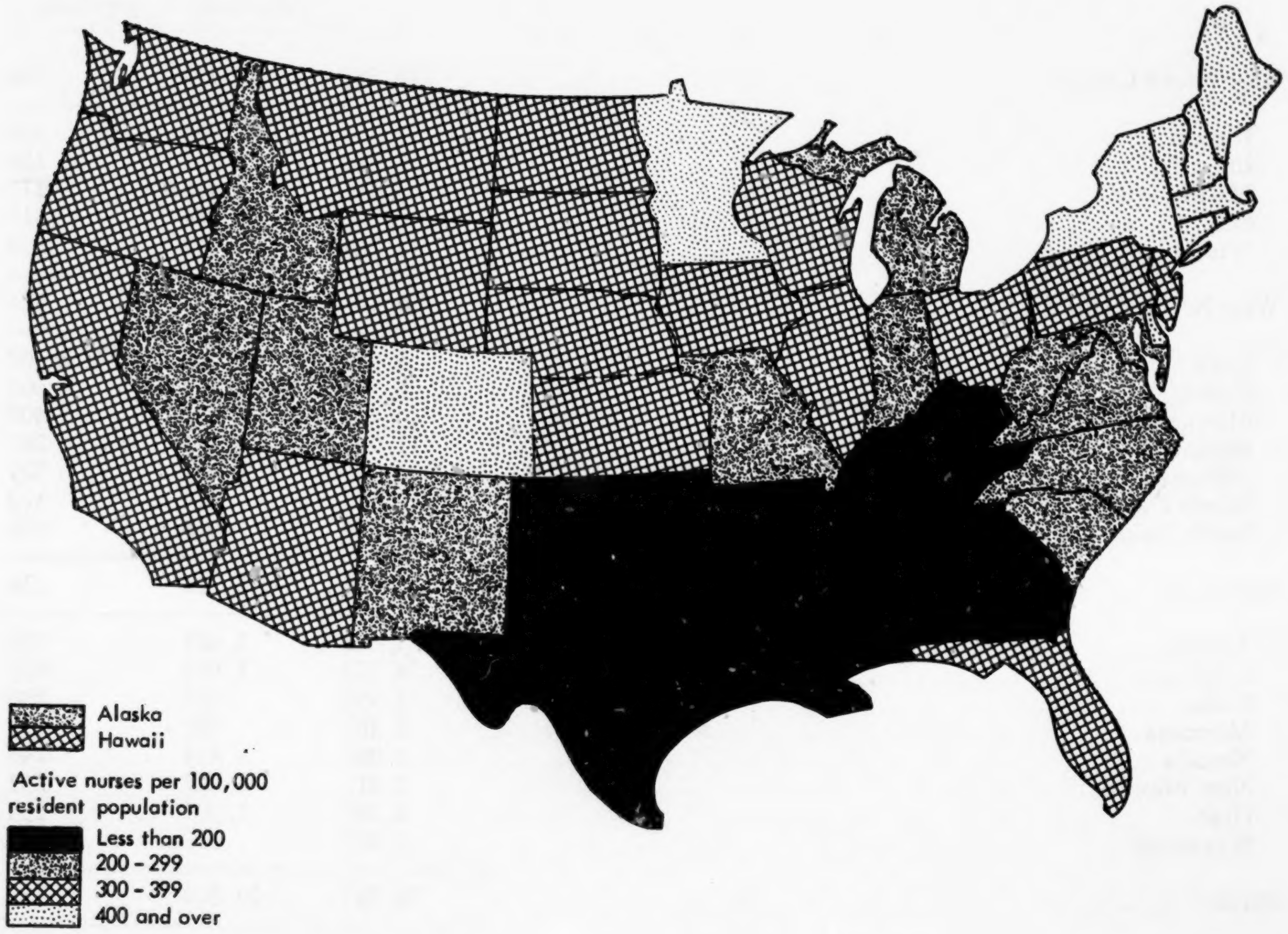


FIGURE 15.—Active nurses in relation to population in each State: 1966.

Alaska
Hawaii
Active nurses per 100,000 resident population
Less than 200
200 - 299
300 - 399
400 and over

Table 99

If present trends in nursing school graduates and losses from the profession continue, it is estimated that there will be 794,400 active nurses in 1975 in comparison to 659,000 in 1968. This would mean an increase in the number of active nurses per 100,000 population from 331 in 1968 to 362 in 1975.

Table 99

Estimated supply of active nurses: 1969–75

Year	Graduates	Net losses from profession [1]	Active nurses as of January 1		Resident population [2] (thousands)
			Number	Rate per 100,000 population	
1969	40, 000	20, 400	680, 000	340	199, 861
1970	40, 800	21, 000	699, 600	344	203, 447
1971	41, 000	21, 600	719, 400	349	206, 307
1972	41, 800	22, 200	738, 800	353	209, 330
1973	42, 300	22, 800	758, 400	357	212, 490
1974	43, 000	23, 300	777, 900	360	215, 785
1975	43, 400	23, 900	797, 600	364	219, 211

[1] Includes losses from deaths and retirements, less those returning from inactive status and foreign-trained nurses.

[2] Includes Armed Forces and civilians in 50 States and the District of Columbia.

Source: Bureau of Health Professions Education and Manpower Training, Division of Nursing.

Selected Allied Health Occupations

Under the Allied Health Professions Personnel Training Act of 1966 (P.L. 89–751) the Public Health Service is authorized to support training in allied health professions. The regulations for educational improvement grants under this act specify the following occupations: Baccalaureate or its equivalent—dental hygienist, dietitian, medical record librarian, medical technologist, occupational therapist, optometric technologist, physical therapist, radiologic technologist, and sanitarian; associate degree or its equivalent—dental assistant, dental hygienist, dental laboratory technician, dietary technician, inhalation therapy technician, medical laboratory technician, medical record technician, occupational therapy assistant, ophthalmic assistant, optometric technician, sanitarian technician, and X-ray technician.

Information on the training programs for many of these occupations is sparse and inadequate. In general those occupations for which educational programs are accredited or approved by a professional organization are the only ones for which data on students and graduates are available. Also lacking is the count of persons engaged in many of the allied health occupations.

The tables which follow present data for these occupations in the list above: dental assistant, dental hygienist, dental laboratory technician, medical record librarian, medical technologist, occupational therapist, physical therapist, and radiologic (X-ray) technologist-technician.

Dental Assisting

Dental assistants are not licensed but may be certified by the Certifying Board of the American Dental Assistants Association if they are graduates of an accredited training program or have completed equivalent training.

Programs for training dental assistants are accredited by the Council on Dental Education of the American Dental Association.

Tables 100 and 101

Traditionally, dental assistants have been trained on the job by their dentist-employers. However, the number of institutions offering accredited training programs is increasing very rapidly. There were 26 such programs in 1961 as compared with 134 in 1968. It is estimated that by 1974 there will be 250 programs for training dental assistants.

To be accredited, a program must provide at least 1 academic year of training. However, 2-year programs are available which supplement the required training in dental assisting with a year of general education.

In 1968-69 there were nearly 4,500 students enrolled in accredited dental assistant training programs; by 1974-75 it is estimated that this will increase to 9,500. In 1967-68, 2,300 persons were graduated from dental assistant training programs, a number which is expected to increase to 6,000 by 1974-75.

Table 100

Programs for training dental assistants, students, and graduates: 1961–62 through 1968–69

Academic year	Number of programs	Number of students	Number of graduates
1961–62..........	26	1,181	658
1962–63..........	33	1,419	695
1963–64..........	42	1,551	895
1964–65..........	50	1,919	1,242
1965–66..........	64	2,798	1,593
1966–67..........	81	3,159	1,963
1967–68..........	101	3,819	2,302
1968–69..........	134	4,475	....

Source: American Dental Association, Council on Dental Education. Dental Students' Register for each year through 1966–67.

American Dental Association, Council on Dental Education. Annual Report on Dental Auxiliary Education 1967–68, and preliminary 1968–69 data.

Table 101

Estimated number of programs for training dental assistants, students, and graduates: 1969–70 and 1974–75

Academic year	Number of programs	Number of students	Number of graduates
1969–70..	150	5,400	3,300
1974–75..	250	9,500	6,000

Source: Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

Table 102

The 134 institutions with accredited training programs for dental assistants in 1968 were located in 39 States and Puerto Rico. A few programs were offered by 4-year colleges and universities, but most were provided by junior colleges and vocational and technical schools.

Table 102

Programs for training dental assistants, students, and graduates, by State: 1968

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year	
Total	4,475	3,626	2,302
ALABAMA			
Adult Education Center	30	30	....
ARIZONA			
Maricopa Technical College	25	25	18
ARKANSAS			
Little Rock Adult Vocational School	20	10	10
CALIFORNIA			
Cabrillo College	39	26	9
Cerritos College	82	58	41
Chabot College	55	30	16
Chaffey College	33	33	35
Citrus College	58	43	23
City College of San Francisco	84	48	15
Contra Costa College	30	26	11
Diablo Valley College	43	22	13
Foothill College	41	23	13
Fullerton Junior College	115	80	38
Grossmont College	74	40	21
Allan Hancock College	38	14	....
Laney College	61	43	16
Loma Linda University	3	3	....
Long Beach City College	26	26	19
Los Angeles City College	87	43	40
College of Marin	38	20	17
Modesto Junior College	45	32	7
Monterey Peninsula College	30	30	25
Orange Coast College	80	49	24
Pasadena City College	80	63	22
Reedley College	70	42	21
Rio Hondo Junior College	64	43	13
Sacramento City College	79	40	30
San Diego Mesa College	99	50	37
San Jose City College	58	41	18
College of San Mateo	84	56	34
Santa Rosa Junior College	51	29	8

Table 102—Continued

Programs for training dental assistants, students, and graduates, by State: 1968—Continued

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year	
COLORADO			
Emily Griffith Opportunity School	25	25	17
CONNECTICUT			
Eli Whitney Regional Voc.-Tech. School	29	29	21
J. M. Wright Technical School	16	16	16
FLORIDA			
Lindsey Hopkins Education Center	33	33	22
Manatee Area Voc.-Tech. Center	17	17	11
Palm Beach Junior College	35	35	23
Pensacola Junior College	21	21	17
Tomlinson Adult Education Center	27	27	24
GEORGIA			
Atlanta Area Technical School	28	28	18
HAWAII			
Kapiolani Community College	13	13	8
IDAHO			
Boise College	21	21	16
ILLINOIS			
University of Illinois	24	24	26
Loyola University	23	23	6
Chicago City College—Loop Campus	49	29	...
Lake Land College	6	6	18
Morton College	16	8	4
Parkland College	22	22	13
Prairie State College	25	25	13
Rock Valley College	23	23	20
Triton Junior College	7	7	...
INDIANA			
Indiana University at Fort Wayne	29	29	28
IOWA			
Area VI Community College	14	14	12
Area X Community College	31	31	...
Area XI Community College	24	24	17
Iowa Western Community College	11	11	...
KANSAS			
Flint Hills Area Voc.-Tech. School	19	7	12
Haskell Institute	11	11	9
KENTUCKY			
Jefferson Area Vocational School	30	30	30
MARYLAND			
Montgomery Junior College	28	17	14
MASSACHUSETTS			
Beth Israel Hospital	20	20	11
Boston University	28	28	22
Fanning Trade High School	29	29	20
McCann Voc.-Tech. School	12	12	6
Northeastern University	122	122	128
Springfield Technical Institute	41	41	29

Table 102—Continued

Programs for training dental assistants, students, and graduates, by State: 1968—Continued

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year	
MICHIGAN			
University of Detroit	25	25	16
Ferris State College	139	89	34
Flint Community Junior College	12	12	6
Grand Rapids Junior College	31	17	6
Michigan Lutheran College	18	15	3
Northwestern Michigan College	22	14	3
Oakland Community College	39	39	5
Washtenaw Community College	22	13	....
MINNESOTA			
University of Minnesota	35	35	37
Brainerd Area Voc.-Tech. School	28	28	16
Hibbing Area Technical Institute	14	14	12
MISSISSIPPI			
Itawamba Junior College	16	7	10
MISSOURI			
Forest Park Community College	23	23	18
Meramec Community College	25	25	20
Metropolitan Junior College	43	37	10
Springfield Voc.-Tech. School	11	11	8
MONTANA			
Great Falls Public Schools	29	16	16
NEBRASKA			
Central Nebraska Tech	20	14	7
Lincoln Community College	25	25	25
Omaha Public School	20	20	18
NEW JERSEY			
Essex County Adult Technical School	37	37	40
Union County Technical Institute	22	22	16
NEW MEXICO			
The University of New Mexico	19	19	10
Eastern New Mexico University	8	8	....
NEW YORK			
New York University	32	32	30
State Univ. of New York	36	28	25
Dutchess Community College	22	14	5
Hudson Valley Community College	21	21	17
NORTH CAROLINA			
University of North Carolina	24	24	20
Central Piedmont Community College	27	27	20
Guilford Technical Institute	12	12	15
Technical Institute of Alamance	18	18	13
Wayne Community College	13	13	7
OHIO			
Jane Addams Vocational High School	22	22	22

Table 102—Continued

Programs for training dental assistants, students, and graduates, by State: 1968—Continued

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year	
OREGON			
Blue Mountain Community College	19	19	9
Lane Community College	20	20	17
Oregon Technical Institute	26	16	12
Portland Community College	50	50	38
Salem Tech.-Voc. Community College	23	23	20
Treasure Valley Community College	6	6	3
PENNSYLVANIA			
University of Pittsburgh	54	54	51
Central Montgomery County Technical School	17	17	17
Murrell Dobbins Technical School	41	41	38
SOUTH CAROLINA			
Florence-Darlington Technical Education Center	21	21	17
Greenville Tech. Education Center	18	18	20
South Carolina Trade Schools	16	16	8
SOUTH DAKOTA			
Lake Area Voc.-Tech. School	19	19	16
TENNESSEE			
Chattanooga Center for Continuing Education	20	20	13
TEXAS			
Bee County College	11	7	....
James Connally Technical Institute	15	15	9
Del Mar College	26	12	....
El Centro College	30	21	....
San Antonio College	54	31	4
UTAH			
Intermountain Indian School	10	10	8
Utah Technical College at Provo	50	50	27
VIRGINIA			
Old Dominion College	23	23	....
WASHINGTON			
Bellingham Technical School	20	20	15
Olympia Voc.-Tech. Institute	21	21	14
Seattle Community College	25	25	20
Spokane Community College	43	43	10
Tacoma Voc.-Tech. Institute	32	32	29
WEST VIRGINIA			
West Virginia University	26	26	....
WISCONSIN			
Kenosha Technical Institute	29	29	29
Madison Area Technical College	43	43	29
Milwaukee Technical College	45	45	30
Northeast Wisconsin Technical Institute	26	26	16
Western Wisconsin Technical Institute	22	22	20
PUERTO RICO			
University of Puerto Rico	33	33	28

Source: American Dental Association, Council on Dental Education. Annual Report on Dental Auxiliary Education 1968–69 (preliminary data).

Dental Hygiene

Dental hygienists are licensed in all States and the District of Columbia. Requirements for licensure include:

1. Completion of a dental hygiene curriculum at the college level of 2 years in length.
2. A State examination (49 States and the District of Columbia require a written test, 46 States and the District of Columbia require a clinical examination, and 17 States require an oral examination).

Programs in dental hygiene are accredited by the Council on Dental Education of the American Dental Association.

Tables 103 and 104

The number of schools with programs in dental hygiene has doubled since 1961–62. By 1974–75 it is estimated that there will be about 125 such schools and that the present enrollment of 5,200 will increase to 8,400. By 1975 the number of graduates is estimated at about 3,800 a year.

Table 103

Schools for training dental hygienists, students, and graduates: selected years 1930–31 through 1968–69

Academic year	Number of schools	Number of students	Number of graduates
1930–31	17	....	364
1935–36	19	....	335
1940–41	18	....	366
1945–46	17	678	403
1950–51	27	1,454	636
1955–56	33	2,009	902
1959–60	34	2,237	992
1960–61	37	2,497	1,023
1961–62	43	2,752	1,219
1962–63	47	3,005	1,257
1963–64	49	3,278	1,429
1964–65	53	3,502	1,491
1965–66	56	3,863	1,650
1966–67	58	4,041	1,739
1967–68	67	4,309	1,834
1968–69	85	5,187	....

Source: Pelton, Walter J.; Pennell, Elliott H.; and Vavra, Helen M. Health Manpower Source Book 8. Dental Hygienists. Public Health Service Publication No. 263, Sec. 8. Washington, U.S. Government Printing Office, 1957.

American Dental Association, Council on Dental Education. Dental Students' Register for each year 1959–60 through 1966–67.

American Dental Association, Council on Dental Education. Annual Report on Dental Auxiliary Education 1967–68, and preliminary 1968–69 data.

Table 104

Estimated number of schools for training dental hygienists, students, and graduates: 1969–70 and 1974–75

Academic year	Number of schools	Number of students	Number of graduates
1969–70	90	5,800	2,500
1974–75	125	8,400	3,800

Source: Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

Table 105

The 85 schools with dental hygiene programs in 1968 were located in 39 States and the District of Columbia. New York had eight programs, California and Illinois each had seven, and Michigan, North Carolina, and Washington each had four programs. There were some programs in each of the nine geographic divisions of the United States. About one-half of the programs were in 4-year colleges and universities and most of the rest were in junior colleges.

Table 105

Schools for training dental hygienists, students, and graduates, by State: 1968

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year [1]	
Total	5,187	2,915	1,834
ARIZONA			
Phoenix College	20	20	
ARKANSAS			
University of Arkansas	20	20	
CALIFORNIA			
University of California	49	24	21
University of Southern California	82	42	37
Loma Linda University	64	32	31
Cabrillo College	52	28	
Chabot College	17	17	
Diablo Valley College	36	18	16
Foothill College	37	20	16
COLORADO			
Rangely College	46	23	15
CONNECTICUT			
Fones School of Dental Hygiene	124	56	48
DISTRICT OF COLUMBIA			
Howard University	25	13	19
FLORIDA			
Palm Beach Junior College	72	39	35
Pensacola Junior College	73	42	27
St. Petersburg Junior College	58	33	20
GEORGIA			
Armstrong State College	28	28	
Macon Junior College	17	17	
Medical College of Georgia	21	11	
HAWAII			
University of Hawaii	49	31	14
IDAHO			
Idaho State University	39	21	12

Table 105—Continued

Schools for training dental hygienists, students, and graduates, by State: 1968—Continued

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year [1]	
ILLINOIS			
Loyola University	32	32	....
Northwestern University	61	32	20
Southern Illinois University	70	37	33
Lake Land College	31	15	....
Parkland College	14	14	....
Prairie State College	38	19	....
William Rainey Harper College	40	40	....
INDIANA			
Indiana University	78	35	39
Indiana Univ. at Fort Wayne	42	22	15
IOWA			
University of Iowa	68	34	35
KANSAS			
Wichita State University	38	21	....
KENTUCKY			
University of Kentucky	22	10	....
University of Louisville	39	21	20
LOUISIANA			
Loyola University, New Orleans	78	39	29
MAINE			
Westbrook Junior College	66	41	23
MASSACHUSETTS			
Forsyth School for Dental Hygienists	210	109	96
MICHIGAN			
University of Detroit	94	43	33
University of Michigan	77	38	40
Ferris State College	68	40	35
Flint Community Junior College	40	20	....
MINNESOTA			
University of Minnesota	110	60	39
MISSOURI			
University of Missouri at Kansas City	55	26	23
Forest Park Community College	48	29	....
NEBRASKA			
University of Nebraska	34	20	10
NEW JERSEY			
Fairleigh Dickinson University	97	43	29
NEW MEXICO			
University of New Mexico	42	22	20
NEW YORK			
Columbia University	40	18	21
State University of New York	170	103	79
Broome Technical Community College	84	46	30
Erie County Technical Institute	181	96	60
Hudson Valley Community College	113	68	42
Monroe Community College	90	56	26
New York City Community College	172	97	52
Onondaga Community College	57	44	24

Table 105—Continued

Schools for training dental hygienists, students, and graduates, by State: 1968—Continued

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year [1]	
NORTH CAROLINA			
University of North Carolina	29	15	17
Central Piedmont Community College	71	38	33
Guilford Technical Institute	17	17	27
Wayne Community College	51	30	19
NORTH DAKOTA			
North Dakota State School of Science	37	23	6
OHIO			
University of Cincinnati	46	25	....
The Ohio State University	151	83	75
Cuyahoga Community College	51	35	15
OREGON			
University of Oregon	63	33	27
Lane Community College	16	16	....
PENNSYLVANIA			
University of Pennsylvania	76	38	42
University of Pittsburgh	100	54	36
Temple University	122	62	45
RHODE ISLAND			
University of Rhode Island	43	26	16
SOUTH CAROLINA			
Greenville Technical Education Center	22	22	....
Richland Technical Education Center	42	26	23
SOUTH DAKOTA			
University of South Dakota	28	16	....
TENNESSEE			
Meharry Medical College	15	7	4
University of Tennessee	98	50	47
TEXAS			
Baylor University	81	42	35
The University of Texas	73	38	32
VERMONT			
The University of Vermont	39	25	15
VIRGINIA			
Old Dominion College	67	41	....
WASHINGTON			
University of Washington	48	23	21
Clark College	20	20	....
Shoreline Community College	24	24	....
Yakima Valley College	12	12	....
WEST VIRGINIA			
West Liberty State College	99	45	35
West Virginia University	82	22	14
WISCONSIN			
Marquette University	113	59	66
Madison Area Technical College	23	23	....

---

[1] Includes all students in the 1st professional year of program. For baccalaureate programs this may be the 1st, 2d, or 3d post-high school year.

Source: American Dental Association, Council on Dental Education. Annual Report on Dental Auxiliary Education, 1968–69 (preliminary data).

Dental Laboratory Technology

Dental laboratory technicians are not licensed but may be certified after passing an examination given by the National Board for Certification of the National Association of Certified Dental Laboratories. Technicians may take the examination after completing the 2-year accredited curriculum and 3 years of employment experience, or fulfilling other requirements in lieu of formal training.

Training programs for dental laboratory technicians are accredited by the Council on Dental Education of the American Dental Association.

Tables 106 and 107

Most dental technicians receive on-the-job training in commercial laboratories or dental offices. There are relatively few formal educational programs for dental technicians at present although the number of accredited programs is growing very rapidly. In 1968–69 there were 19 such programs with a total of some 800 students. These programs provide 1 year of basic and dental sciences and a 2d year of supervised practical laboratory experience.

It is estimated that by 1974–75 there will be 40 training programs for dental laboratory technicians with some 2,000 students and 850 graduates a year.

Table 106

Programs for training dental laboratory technicians, students, and graduates: 1959–60 through 1968–69

Academic year	Number of programs	Number of students	Number of graduates
1959–60	3	184	78
1960–61	4	230	81
1961–62	4	273	95
1962–63	5	295	108
1963–64	5	285	104
1964–65	5	343	119
1965–66	6	342	142
1966–67	10	510	162
1967–68	15	729	325
1968–69	19	803	....

Source: American Dental Association, Council on Dental Education. Dental Students' Register for each year through 1966–67. American Dental Association, Council on Dental Education. Annual Report on Dental Auxiliary Education 1967–68, and preliminary 1968–69 data.

Table 107

Estimated number of programs for training dental laboratory technicians, students, and graduates: 1969–70 and 1974–75

Academic year	Number of programs	Number of students	Number of graduates
1969–70	22	1,050	450
1974–75	40	2,000	850

Source: Bureau of Health Professions Education and Manpower Training, Division of Dental Health.

Table 108

The 19 accredited programs for training dental technicians in 1968–69 were located in only 14 States since California had four programs and Florida and Texas each had two programs. There were no programs in the New England States or in the Mountain States.

A few of the programs were in 4-year colleges and universities, a few in junior colleges, and the rest in vocational and technical schools.

Table 108

Programs for training dental laboratory technicians, students, and graduates, by State: 1968

State and school	Number of students as of October 15, 1968		Number of graduates 1967–68
	Total	First year	
Total	803	462	325
CALIFORNIA			
Casa Loma College	69	27	39
City College of San Francisco	39	22	16
Los Angeles City College	132	94	35
Diablo Valley College	33	19	11
FLORIDA			
Lindsey Hopkins Education Center	42	15	15
Palm Beach Junior College	25	15	9
GEORGIA			
Atlanta Area Technical School	37	21	12
ILLINOIS			
Southern Illinois University	54	28	20
KENTUCKY			
University of Kentucky	16	9	5
MICHIGAN			
Ferris State College	44	24	15
NEBRASKA			
Central Nebraska Voc.–Tech. School	12	12	....
NEW YORK			
New York City Community College	86	55	38
NORTH CAROLINA			
Durham Technical Institute	37	22	14
OREGON			
Portland Community College	34	20	12
SOUTH DAKOTA			
Lake Area Voc.–Tech. School	18	10	....
TEXAS			
James Connally Technical Institute	65	33	11
Sheppard Air Force Base	14	14	66
WASHINGTON			
Tacoma Voc.–Tech. Institute	20	5	....
WISCONSIN			
Milwaukee Technical College	26	17	7

Source: American Dental Association, Council on Dental Education. Annual Report on Dental Auxiliary Education 1968–69 (preliminary data).

Medical Record Librarianship

Medical record librarians may be registered upon successful completion of a national registration examination. The minimum educational requirement for professional registration is 2 years of general college work and 1 year of study in medical record science in an approved school. Persons who pass the examination may use the professional designation, RRL.

Schools for medical record librarians are accredited by the Council on Medical Education of the American Medical Association in collaboration with the Committee on Education and Registration of the American Association of Medical Record Librarians.

Table 109

Beginning in 1970 all accredited schools for medical record librarians will be at the baccalaureate level and above, either in a 4-year program leading to a baccalaureate or in a program of postbaccalaureate study.

In 1967–68 there were 27 accredited programs with over 200 students in the final year. In 1960–61, with 28 programs, there were only about 150 students in the final year.

Table 109

Accredited programs for medical record librarians, students, and graduates: selected years 1943 through 1967–68

Year [1]	Number of programs	Number of students [2]	Number of graduates [3]
1943	10	....	27
1948	13	59	58
1953	24	106	99
1958	30	169	97
1959–60	29	144	137
1960–61	28	146	139
1961–62	27	168	152
1962–63	28	150	142
1963–64	27	174	161
1964–65	29	199	180
1965–66	28	214	192
1966–67	[4] 28	211	192
1967–68	27	214	151

[1] Calendar year for 1943–58; academic year for 1959–60 through 1967–68.

[2] Enrollment in final year only.

[3] Graduates through August of year concerned.

[4] Includes program at Northeastern University for which data on enrollment and graduates are not available.

Source: Hospital Number of the Journal of the American Medical Association each year 1943–53.

Education Number of the Journal of the American Medical Association, Nov. 25, 1968.

Table 110

The 28 accredited programs for medical record librarians in 1966-67 were located in 19 States, the District of Columbia, and Puerto Rico. They were located in every geographic division except the Mountain States. Five States (California, Georgia, Illinois, Pennsylvania, and Texas) each had two programs.

Table 110

Accredited programs for medical record librarians, students, and graduates, by State: 1966-67

State and school	Number of students [1]	Number of graduates		
		Total	Bachelors [2]	Certificate [3]
Total	211	[4] 192	146	45
CALIFORNIA				
Loma Linda University	4	3	3	...
University of California, Los Angeles	9	[4] 9	8	...
DISTRICT OF COLUMBIA				
George Washington University	5	5	5	...
GEORGIA				
Emory University	2	1	1	...
Medical College of Georgia-Eugene Talmadge Memorial Hospital	11	11	11	...
ILLINOIS				
St. Elizabeth Hospital	9	9	...	9
University of Illinois at the Medical Center	6	5	5	...
INDIANA				
Indiana University School of Medicine	15	15	15	...
LOUISIANA				
University of Southwestern Louisiana-Lafayette Charity Hospital	10	8	8	...
MARYLAND				
U.S. Public Health Service Hospital	12	11	11	...
MASSACHUSETTS				
Northeastern University	...	...	...	...
MICHIGAN				
Mercy College	4	4	4	...
MINNESOTA				
College of St. Scholastica	16	13	13	...
MISSISSIPPI				
University Hospital	6	3	...	3
MISSOURI				
Avila College	4	4	4	...
Homer G. Phillips Hospital	2	2	...	2
St. Louis University	13	9	9	...
NEBRASKA				
College of St. Mary	2	2	2	...
NORTH CAROLINA				
Wake Forest College-North Carolina Baptist Hospital	5	5	...	5
OKLAHOMA				
Hillcrest Medical Center	5	5	...	5

Table 110—Continued

Accredited programs for medical record librarians, students, and graduates, by State: 1966–67—Continued

State and school	Number of students [1]	Number of graduates		
		Total	Bachelors [2]	Certificate [3]
PENNSYLVANIA				
Mount Mercy College-Mercy Hospital	6	4	4	....
University of Pennsylvania, Graduate Hospital	12	11	11	....
PUERTO RICO				
University of Puerto Rico School of Medicine	10	10	10	....
TENNESSEE				
University of Tennessee-Baptist Memorial Hospital	8	8	....	8
TEXAS				
Incarnate Word College-Santa Rosa Medical Center	6	6	6	....
Sacred Heart Dominican College-St. Joseph's Hospital	13	13	....	13
WASHINGTON				
Seattle University-Providence Hospital	11	11	11	....
WISCONSIN				
Viterbo College-St. Francis Hospital	5	5	5	....

---

[1] Enrollment in final year only.

[2] Includes graduates of 12-month certificate programs which require a bachelor's degree for admission.

[3] Persons who received a certificate in medical record science (less than collegiate level).

[4] Includes 1 master's degree.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 111

It is difficult to estimate accurately the number of medical record librarians in the United States because many persons are working in this field who have not completed one of the accredited programs or obtained professional registration. About 37,000 persons were employed in the medical record departments of hospitals, clinics, health departments and agencies, or industrial establishments in 1967. Of this number 3,800 were registered medical record librarians and 1,500 were accredited record technicians. An additional 4,200 persons were working as medical record librarians, making a total of about 8,000 such persons employed.

The majority of medical record librarians are employed in hospitals. A 1966 survey of manpower resources in hospitals registered by the American Hospital Association showed 6,300 medical record librarians employed in hospitals at that time.

Table 111

Number of medical record librarians: selected years 1950–67

Year	Medical record librarians	
	Total	Registered [1]
1950	4,000	2,000
1960	6,000	3,000
1967	[2] 8,000	3,800

[1] Persons who have successfully completed a national registration examination which qualifies them to use the professional designation Registered Record Librarian (RRL).

[2] Includes about 2,000 medical record librarians employed outside of hospitals—in clinics, health departments and agencies, or industrial establishments. The 1966 Survey of Manpower Resources in Hospitals showed 6,300 employed in hospitals at that time.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Bureau of Health Professions Education and Manpower Training, Division of Allied Health Manpower.

Medical Technology

Medical technologists may be registered with the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists. Certification is open to technologists who have the requisite training and experience (3 years of college plus 12 months of specialized training in an accredited school of medical technology). Persons who pass the national certification examination may use the professional designation of MT(ASCP).

Schools for medical technologists are accredited by the Council on Medical Education of the American Medical Association in collaboration with the Board of Schools of Medical Technology of the American Society of Clinical Pathologists.

Table 112

In 1967-68 there were 787 accredited programs of medical technology with almost 5,300 students in the year of specialized training. There were about 3,860 graduates the same year, an increase of 50 percent since 1959-60.

Table 112

Accredited programs of medical technology, students, and graduates: selected years 1936 through 1967-68

Year [1]	Number of programs	Number of students [2]	Number of graduates
1936	96	701	....
1941	174	1,084	917
1946	294	2,047	1,078
1951	496	3,518	2,220
1956	656	2,903	2,140
1959-60	702	3,944	2,573
1960-61	734	4,191	2,809
1961-62	757	4,602	2,856
1962-63	779	4,377	3,259
1963-64	784	4,291	2,689
1964-65	781	4,161	3,065
1965-66	773	4,752	3,460
1966-67	786	[3] 5,119	[3] 3,845
1967-68	787	[3] 5,285	[3] 3,855

[1] Calendar year for 1936-56; academic year for 1959-60 through 1967-68.

[2] Enrollment for the year of specialized training, includes students admitted during year.

[3] Includes estimates for nonreporting programs.

Source: Hospital Number of the Journal of the American Medical Association each year 1936-51. Education Number of the Journal of the American Medical Association, Nov. 25, 1968.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 113

There were accredited programs of medical technology in all States except Alaska and in the District of Columbia, the Canal Zone, and Puerto Rico in 1966-67. California had the largest number of programs (58), followed by Illinois with 47 and Ohio with 46.

Table 113

Accredited programs of medical technology, students, and graduates, by State: 1966–67

Geographic division and State	Number of programs	Number of students [1]	Number of graduates
All locations [2]	786	5, 119	3, 845
United States	731	4, 972	3, 620
New England	48	316	208
Connecticut	14	87	68
Maine	3	10	10
Massachusetts	23	155	73
New Hampshire	2	18	18
Rhode Island	4	29	15
Vermont	2	17	24
Middle Atlantic	102	548	450
New Jersey	27	126	82
New York	36	204	178
Pennsylvania	39	218	190
South Atlantic	79	611	392
Delaware	1	11	5
District of Columbia	9	59	44
Florida	14	84	52
Georgia	15	127	70
Maryland	4	41	30
North Carolina	10	80	64
South Carolina	8	42	23
Virginia	11	105	66
West Virginia	7	62	38
East South Central	49	357	244
Alabama	12	119	73
Kentucky	13	85	65
Mississippi	6	33	26
Tennessee	18	120	80
West South Central	76	616	400
Arkansas	9	47	28
Louisiana	16	116	107
Oklahoma	12	94	69
Texas	39	359	196
East North Central	176	1, 125	834
Illinois	47	273	176
Indiana	18	110	76
Michigan	33	197	171
Ohio	46	344	226
Wisconsin	32	201	185
West North Central	74	574	480
Iowa	14	71	72
Kansas	8	63	65
Minnesota	12	153	138
Missouri	21	121	94
Nebraska	8	88	57
North Dakota	5	39	26
South Dakota	6	39	28
Mountain	47	241	193
Arizona	5	43	25
Colorado	17	92	89
Idaho	6	20	14
Montana	4	21	17
Nevada	2	4	2
New Mexico	5	17	12
Utah	7	36	29
Wyoming	1	8	5
Pacific	80	584	419
Alaska			
California	58	396	264
Hawaii	5	20	18
Oregon	6	74	61
Washington	11	94	76
Canal Zone	1	5	6
Puerto Rico	2	60	40
Nonreporting programs	52	[3]82	[3]179

---

[1] Enrollment for the year of specialized training.

[2] Includes the United States, Canal Zone, Puerto Rico, and nonreporting programs.

[3] Estimated.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 114

In 1967 there were 47,500 registered medical technologists of whom about 35,600 were active. It is estimated that about 4,400 additional persons with bachelor's degrees in chemistry, microbiology, etc., were working as medical technologists, making a total of 40,000 active medical technologists in 1967.

Table 114

Number of registered medical technologists: selected years 1930–67

Year	Number of registered [1] medical technologists	
	Total	Active
1930	500	....
1935	2,400	....
1940	6,000	....
1945	9,700	....
1950	14,000	....
1955	18,000	....
1960	29,736	22,300
1961	31,721	....
1962	33,874	....
1963	35,584	....
1964	38,139	....
1965	41,063	[2] 30,800
1966	44,250	....
1967	47,531	[2] 35,600

---

[1] Persons who have successfully completed a national certification examination which qualifies them to use the professional designation of MT(ASCP).

[2] It is estimated that there were 35,000 active medical technologists in 1965 and 40,000 in 1967 (including both registered medical technologists and persons with a bachelor's degree in chemistry, microbiology, or other biological science).

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Board of Registry of Medical Technologists of the American Society of Clinical Pathologists.

Occupational Therapy

Occupational therapists may be registered upon passing a national examination conducted by the American Occupational Therapy Association. The minimum educational requirement is a bachelor's degree plus 6 months of supervised clinical practice. Persons who pass the examination may use the professional designation OTR.

Schools for occupational therapists are approved by the Council on Medical Education of the American Medical Association in collaboration with the Council on Education of the American Occupational Therapy Association.

Table 115

Although the number of approved programs in occupational therapy has remained about the same, the number of students enrolled in the final year increased 87 percent from 372 in 1960–61 to 696 in 1967–68. The number of graduates increased 46 percent in the same period.

Table 115

Approved courses in occupational therapy, students, and graduates: selected years 1936 through 1967–68

Year [1]	Number of courses	Number of students [2]	Number of graduates [3]
1936	4	...	...
1941	6	...	118
1946	18	...	[4] 375
1951	25	...	418
1956–57	30	...	490
1960–61	31	372	367
1961–62	31	439	302
1962–63	31	501	364
1963–64	32	578	438
1964–65	32	537	505
1965–66	32	602	485
1966–67	32	615	536
1967–68	32	696	...

[1] Calendar year for 1936–51; academic year for 1956–57 through 1967–68.

[2] October enrollment of undergraduate students in final year of program.

[3] Calendar year data (for 2nd part of academic year); include graduates of at least 4 years of academic education and a minimum of 6 months of clinical practice which qualified them for admission to the national examination conducted by the American Occupational Therapy Association for professional registration.

[4] In addition there were 220 graduates of War Emergency courses.

Source: Hospital Number of the Journal of the American Medical Association each year 1936–51.

Education Number of the Journal of the American Medical Association, Nov. 25, 1968.

Table 116

The 32 approved programs in occupational therapy in 1967 were located in 20 States and Puerto Rico. Four States (California, Michigan, New York, and Wisconsin) had three programs each; Massachusetts, Minnesota, and Washington had two programs each; the remaining States had one program apiece. There were programs in each geographic division except the East South Central States.

Table 116

Approved courses in occupational therapy, students, and graduates, by State: 1967

State and school	Number of students [1]	Number of graduates [2]
Total	696	534
CALIFORNIA		
Loma Linda University	6	3
San Jose State College	71	35
University of Southern California	21	20
COLORADO		
Colorado State University	43	29
FLORIDA		
University of Florida	24	18
ILLINOIS		
University of Illinois College of Medicine	(3)	14
INDIANA		
Indiana University School of Medicine	14	24
IOWA		
University of Iowa	20	10
KANSAS		
University of Kansas	23	21
MASSACHUSETTS		
Boston University, Sargent College	27	9
Tufts University—Boston School of Occupational Therapy	9	28
MICHIGAN		
Eastern Michigan University	24	10
Wayne State University	25	19
Western Michigan University	46	29
MINNESOTA		
College of St. Catherine	23	16
University of Minnesota	20	24
MISSOURI		
Washington University School of Medicine	10	12
NEW HAMPSHIRE		
University of New Hampshire	16	15
NEW YORK		
Columbia University College of Physicians and Surgeons	31	25
New York University School of Education	20	13
State University of New York at Buffalo	19	12

Table 116—Continued

Approved courses in occupational therapy, students, and graduates, by State: 1967—Continued

State and school	Number of students [1]	Number of graduates [2]
NORTH DAKOTA		
University of North Dakota	11	3
OHIO		
Ohio State University	28	19
PENNSYLVANIA		
University of Pennsylvania School of Allied Medical Professions, Philadelphia School of Occupational Therapy	24	13
PUERTO RICO		
University of Puerto Rico School of Medicine	10	15
TEXAS		
Texas Woman's University	25	21
VIRGINIA		
Richmond Professional Institute	35	15
WASHINGTON		
University of Puget Sound	19	16
University of Washington	9	11
WISCONSIN		
Mount Mary College	18	18
University of Wisconsin	25	13
Lawrence University	(4)	4

---

[1] October enrollment of undergraduate students in final year of program.

[2] Calendar year data; include graduates of at least 4 years of academic education and a minimum of 6 months of clinical practice which qualified them for admission to the national examination conducted by the American Occupational Therapy Association for professional registration.

[3] Students in final year reported with students in clinical practice by this school.

[4] Program being phased out.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 117

In 1967 there were 8,300 registered occupational therapists of whom an estimated 6,500 were active. In 1966 a survey of manpower resources in hospitals reported that about 4,100 were employed in hospitals registered by the American Hospital Association at that time. There are no accurate data on the number of occupational therapists over the years.

Table 117

Number of registered occupational therapists: selected years 1935–67

Year	Number of registered [1] occupational therapists	
	Total	Active
1935		606
1940		817
1945		1, 212
1950		2, 040
1955		3, 700
1960		6, 300
1965	[2] 7, 390	6, 000
1966	[2] 7, 728	....
1967	[2] 8, 300	6, 500

[1] Persons who have passed the national examination conducted by the American Occupational Therapy Association.

[2] Includes occupational therapists in 50 States, the District of Columbia, Puerto Rico, Armed Forces overseas, and foreign.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, Health Manpower, 1965. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1966.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

American Occupational Therapy Association.

Table 118

In 1966 there were 3.8 registered occupational therapists per 100,000 population in the United States (including both active and inactive occupational therapists). This ratio varied among the States from 0.7 per 100,000 population in Mississippi and South Carolina to 12.1 in Hawaii.

Table 118

Number of registered occupational therapists and occupational therapy/population ratios in each State: 1966

Geographic division and State	Number of occupational therapists	Population July 1, 1966 [1] (thousands)	Rate per 100,000 population
All locations [2]	[3] 7,728	200,119	3.9
United States	7,490	195,936	3.8
New England	577	11,244	5.1
Connecticut	150	2,878	5.2
Maine	30	978	3.1
Massachusetts	312	5,403	5.8
New Hampshire	52	676	7.7
Rhode Island	19	898	2.1
Vermont	14	411	3.4
Middle Atlantic	1,398	36,705	3.8
New Jersey	234	6,899	3.4
New York	807	18,205	4.4
Pennsylvania	357	11,601	3.1
South Atlantic	749	29,105	2.6
Delaware	29	513	5.7
District of Columbia	69	806	8.6
Florida	141	5,893	2.4
Georgia	46	4,445	1.0
Maryland	187	3,611	5.2
North Carolina	67	4,974	1.3
South Carolina	19	2,589	0.7
Virginia	170	4,465	3.8
West Virginia	21	1,809	1.2
East South Central	128	12,894	1.0
Alabama	28	3,511	0.8
Kentucky	47	3,181	1.5
Mississippi	16	2,337	0.7
Tennessee	37	3,866	1.0
West South Central	319	18,795	1.7
Arkansas	18	1,956	0.9
Louisiana	36	3,617	1.0
Oklahoma	30	2,477	1.2
Texas	235	10,747	2.2

Table 118 —Continued

Number of registered occupational therapists and occupational therapy/population ratios in each State: 1966—Continued

Geographic division and State	Number of occupational therapists	Population July 1, 1966 [1] (thousands)	Rate per 100,000 population
East North Central	1,736	38,736	4.5
Illinois	430	10,786	4.0
Indiana	126	4,951	2.5
Michigan	486	8,468	5.7
Ohio	288	10,364	2.8
Wisconsin	406	4,167	9.7
West North Central	706	15,933	4.4
Iowa	77	2,760	2.8
Kansas	111	2,275	4.9
Minnesota	280	3,572	7.8
Missouri	147	4,564	3.2
Nebraska	41	1,439	2.8
North Dakota	30	643	4.7
South Dakota	20	679	2.9
Mountain	323	7,717	4.2
Arizona	51	1,603	3.2
Colorado	186	1,955	9.5
Idaho	12	697	1.7
Montana	16	702	2.3
Nevada	10	431	2.3
New Mexico	24	1,002	2.4
Utah	18	1,007	1.8
Wyoming	6	319	1.9
Pacific	1,554	24,807	6.3
Alaska	10	265	3.8
California	1,190	18,802	6.3
Hawaii	88	727	12.1
Oregon	73	1,973	3.7
Washington	193	3,040	6.3
Puerto Rico	47	2,657	1.8
Armed Forces overseas	59	984	....
Foreign	132	542	....

---

[1] State figures may not add to totals because of rounding.

[2] Includes the United States, Puerto Rico, the Armed Forces overseas, and Foreign.

[3] Probably about 2,000 are not currently in practice.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P–25, Nos. 380, 392.

Physical Therapy

Physical therapists are licensed in 48 States and the District of Columbia. Licensure is voluntary in 10 States. Requirements for licensure include:

1. Completion of one of the following educational programs in an approved school:
   a. A 4-year course in physical therapy leading to a bachelor's degree.
   b. A 1-year certificate course for students who have a bachelor's degree in some other field.
   c. A 2-year graduate program leading to a master's degree for students with a bachelor's degree.
2. Completion of 4 months of clinical experience.
3. Pass a State examination (44 States and the District of Columbia require a written examination—seven States accept certification from the American Registry of Physical Therapists in lieu of a written test; nine States require an oral examination; and six States require a practical examination).

Programs in physical therapy are accredited by the Council on Medical Education of the American Medical Association in collaboration with the Council on Education of the American Physical Therapy Association.

Table 119

The number of accredited programs for physical therapists increased from 39 in 1960–61 to 48 in 1967–68. During the same period the number of students in the final year increased 58 percent to 1,165 and the number of graduates increased 47 percent.

Table 119

Accredited programs of physical therapy, students, and graduates: selected years 1936 through 1967–68

Year [1]	Number of programs	Number of students [2]	Number of graduates [3]
1936	13	...	...
1941	16	...	[4] 238
1946	24	...	[4] 757
1951	31	...	[4] 591
1956	37	800	701
1960–61	39	739	682
1961–62	42	727	689
1962–63	42	814	757
1963–64	42	930	891
1964–65	42	955	890
1965–66	43	991	936
1966–67	46	1,066	1,005
1967–68	46	1,165	...

---

[1] Calendar year for 1936–56; academic year for 1960–61 through 1967–68.

[2] October enrollment of students in final year of program.

[3] Calendar year data (for 2d part of academic year).

[4] Includes emergency course students who completed their requirements for certification in specified year.

Source: Hospital Number of the Journal of the American Medical Association each year 1936–51.

Education Number of the Journal of the American Medical Association, Nov. 25, 1968.

Table 120

The 46 accredited programs of physical therapy in 1967 were located in 25 States and Puerto Rico. California and New York each had five programs; Massachusetts, Missouri, and Texas had three programs each; six States had two programs; and the rest of the States had one each. There were programs in all nine geographic divisions of the United States.

Table 120

Accredited programs of physical therapy, students, and graduates, by State: 1967

State and school	Number of students [1]	Number of graduates [2]
Total	1,165	1,005
ALABAMA		
University of Alabama	5	7
CALIFORNIA		
Childrens Hospital	16	16
Loma Linda University	42	26
Stanford University School of Medicine	26	23
University of California School of Medicine	32	30
University of Southern California	29	23
COLORADO		
University of Colorado School of Medicine	30	30
CONNECTICUT		
University of Connecticut	58	40
FLORIDA		
University of Florida	18	19
ILLINOIS		
Northwestern University Medical School	28	23
INDIANA		
Indiana University Medical Center	28	24
IOWA		
University of Iowa	27	23
KANSAS		
University of Kansas Medical Center	25	18
KENTUCKY		
University of Kentucky School of Allied Health Personnel	6	2
MARYLAND		
University of Maryland School of Medicine	16	13
MASSACHUSETTS		
Boston University, Sargent College	28	30
Northeastern University, Boston Bouve College	29	31
Simmons College	10	13
MICHIGAN		
University of Michigan	29	24
Wayne State University	4	5
MINNESOTA		
Mayo Clinic	34	28
University of Minnesota	31	25

Table 120—Continued

Accredited programs of physical therapy, students, and graduates, by State: 1967—Continued

State and school	Number of students [1]	Number of graduates [2]
MISSOURI		
St. Louis University School of Nursing and Health Services	29	19
University of Missouri	21	17
Washington University School of Medicine	12	10
NEW YORK		
Columbia University College of Physicians and Surgeons	28	30
Ithaca College-Albert Einstein College of Medicine	64	44
New York University School of Education	24	21
Russell Sage College-Albany Medical College	19	23
State University of New York at Buffalo	24	16
NORTH CAROLINA		
Duke University Medical Center	13	14
University of North Carolina School of Medicine	15	14
OHIO		
Case Western Reserve University	7	8
Ohio State University	48	49
OKLAHOMA		
University of Oklahoma	21	13
PENNSYLVANIA		
D. T. Watson School of Physiatrics	39	36
University of Pennsylvania School of Allied Medical Professions	58	41
PUERTO RICO		
University of Puerto Rico	23	27
TENNESSEE		
University of Tennessee College of Medicine	5	3
TEXAS		
Baylor University Medical Center	20	25
Brooke Army Medical Center	20	18
University of Texas Medical Branch	24	17
VIRGINIA		
Medical College of Virginia	22	27
WASHINGTON		
University of Washington	16	18
WISCONSIN		
Marquette University School of Medicine	26	17
University of Wisconsin Medical School	36	25

---

[1] October enrollment of students in final year of program.

[2] Calendar year data.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 121

It is estimated that more than 13,000 physical therapists were employed in 1967. No accurate figures are available on trends in the number of physical therapists.

Table 121

Number of active physical therapists: selected years 1930–67

Year	Number of active physical therapists	Year	Number of active physical therapists
1930	534	1955	7,300
1935	683	1960	9,000
1940	1,160	1965	12,000
1945	2,304	1967	13,000
1950	4,600		

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, Health Manpower, 1965. Public Health Service Publication 1509. Washington, U.S. Government Printing Office, 1966.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication 1509. Washington, U.S. Government Printing Office, 1968.

American Physical Therapy Association.

Radiologic Technology

A license to practice as a radiologic technician is required in one State and Puerto Rico. Radiologic technologists and technicians may take an examination given by the American Registry of Radiologic Technologists after completion of training in an approved program. Persons who pass the examination may use the title of registered technologist—RT(ARRT).

Programs in radiologic technology are approved by the Council on Medical Education of the American Medical Association in collaboration with the Commission on Technician Affairs of the American College of Radiology.

Table 122

There were 1,072 approved programs in radiologic technology in 1967–68 with some 11,300 students and over 4,900 graduates. The number of students increased 147 percent since 1959–60 and the number of graduates was up 116 percent in the same period.

Table 122

Approved schools of radiologic technology, students, and graduates: selected years 1946 through 1967–68

Year	Number of schools	Number of students [1]	Number of graduates
Calendar:			
1946	130	807	427
1951	283	1,907	1,080
1956	456	3,212	1,966
Academic:			
1959–60	609	4,581	2,285
1960–61	673	5,512	....
Academic—Continued			
1961–62	718	6,231	2,315
1962–63	755	6,944	2,722
1963–64	789	7,341	2,938
1964–65	901	8,970	3,058
1965–66	968	9,460	4,175
1966–67	1,072	13,435	4,027
1967–68	1,126	11,277	4,767

[1] Students in 2-year programs and last 2 years of 3- or 4- year programs.

Source: Hospital Number of the Journal of the American Medical Association each year 1946–56.

Education Number of the Journal of the American Medical Association, Nov. 25, 1968.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 123

There were approved schools of radiologic technology in all States except Alaska and Delaware and in the District of Columbia. Pennsylvania had 75 schools, Ohio 62, and four additional States had 50–59 schools.

Table 123

Approved schools of radiologic technology, students, and graduates, by State: 1966–67

Geographic division and State	Number of schools	Number of students [1]	Number of graduates
United States	964 [2]	10, 130	3, 827
New England	95	964	386
Connecticut	18	246	82
Maine	8	112	41
Massachusetts	51	438	197
New Hampshire	8	45	17
Rhode Island	6	63	25
Vermont	4	60	24
Middle Atlantic	146	1, 686	704
New Jersey	26	292	121
New York	45	533	219
Pennsylvania	75	861	364
South Atlantic	134	1, 531	616
Delaware			
District of Columbia	4	44	17
Florida	22	284	91
Georgia	18	204	89
Maryland	13	258	132
North Carolina	23	193	82
South Carolina	12	132	48
Virginia	20	234	92
West Virginia	22	182	65
East South Central	47	558	187
Alabama	10	126	45
Kentucky	15	154	59
Mississippi	8	68	20
Tennessee	14	210	63
West South Central	79	815	217
Arkansas	6	79	33
Louisiana	12	177	59
Oklahoma	8	96	45
Texas [3] [4]	53	463	80
East North Central	202	2, 256	845
Illinois	57	559	237
Indiana	19	293	71
Michigan	38	377	145
Ohio	62	723	275
Wisconsin	26	304	117
West North Central	130	1, 217	462
Iowa	21	208	83
Kansas	19	154	64
Minnesota	37	399	119
Missouri	28	270	118
Nebraska	10	87	47
North Dakota	7	48	15
South Dakota	8	51	16
Mountain	50	454	170
Arizona	7	45	19
Colorado	16	221	80
Idaho	5	31	16
Montana	7	44	13
Nevada	2	17	7
New Mexico	4	27	9
Utah	7	55	21
Wyoming	2	14	5
Pacific	81	649	240
Alaska			
California	59	469	174
Hawaii	2	13	6
Oregon [4]	10	75	32
Washington	10	92	28

---

[1] Students in 2-year programs or last 2 years of 3- or 4-year programs.

[2] Excludes 3 programs which did not submit reports.

[3] Excludes data on students and graduates of 1 Army service school with a 13-week didactic program.

[4] Includes 1 program with no report on students and graduates.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Stistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

Table 124

In 1967 it was estimated that there were between 75,000 and 100,000 persons employed as radiologic technicians of whom 34,000 were registered. Some 24,000 radiologic technicians were reported in the 1966 Survey of Manpower Resources in Hospitals. Accurate information on the number of radiologic technologists and technicians over the years is lacking.

Table 124

Number of active radiologic technologists and technicians: selected years 1940–67

Year	Active radiologic technologists and technicians	
	Total	Registered [1]
1940	9, 600	2, 400
1945	17, 800	4, 450
1950	30, 800	7, 700
1960	60, 000	27, 000
1965	70, 000	28, 000
1967	75, 000– 100, 000	34, 000

[1] Persons who have passed the examination given by the American Registry of Radiologic Technologists.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, Health Manpower, 1965. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1966.

American Registry of Radiologic Technologists.

Table 125

The 49,300 radiologic technologists and technicians registered by the American Registry of Radiologic Technologists in 1967 were in three specialties within the field: X-ray technology, nuclear medicine technology, and radiation therapy technology.

In relation to population there were about 25 registered radiologic technologists and technicians per 100,000 population in 1967 (including both active and inactive personnel). This ratio varied among the States from a low of 14 per 100,000 population in Mississippi to a high of 47 in Colorado.

Table 125

Number of registered radiologic technologists and technicians and ratios to population in each State: 1967

Geographic division and State	Number of registered radiologic technologists and technicians [1]				Population July 1, 1967 [2] (thousands)	Total registered radiologic technologists per 100,000 population
	Total	X-ray	Nuclear medicine	Radiation therapy		
All locations [3]	49, 304	48, 733	390	181	200, 560	24.6
United States	49, 278	48, 707	390	181	197, 863	24.9
New England	3, 819	3, 794	19	6	11, 344	33.7
Connecticut	1, 136	1, 128	5	3	2, 918	38.9
Maine	314	311	3	...	982	32.0
Massachusetts	1, 679	1, 668	8	3	5, 434	30.9
New Hampshire	242	242	...	...	691	35.0
Rhode Island	260	259	1	...	901	28.9
Vermont	188	186	2	...	420	44.8
Middle Atlantic	7, 905	7, 811	62	32	36, 676	21.6
New Jersey	1, 335	1, 320	9	6	6, 981	19.1
New York	3, 443	3, 401	26	16	18, 023	19.1
Pennsylvania	3, 127	3, 090	27	10	11, 672	26.8
South Atlantic	6, 264	6, 187	50	27	29, 583	21.2
Delaware	149	149	...	...	524	28.4
District of Columbia	157	154	1	2	808	19.4
Florida	1, 441	1, 424	10	7	6, 035	23.9
Georgia	878	865	9	4	4, 490	19.6
Maryland	881	866	8	7	3, 680	23.9
North Carolina	927	915	10	2	5, 059	18.3
South Carolina	505	503	1	1	2, 638	19.1
Virginia	924	912	8	4	4, 541	20.3
West Virginia	402	399	3	...	1, 807	22.2
East South Central	2, 275	2, 236	29	10	13, 014	17.5
Alabama	617	603	8	6	3, 533	17.5
Kentucky	603	593	8	2	3, 201	18.8
Mississippi	316	311	4	1	2, 344	13.5
Tennessee	739	729	9	1	3, 936	18.8
West South Central	4, 187	4, 136	42	9	19, 009	22.0
Arkansas	418	417	1	...	1, 972	21.2
Louisiana	752	745	5	2	3, 663	20.5
Oklahoma	536	530	5	1	2, 516	21.3
Texas	2, 481	2, 444	31	6	10, 858	22.8

Table 125—Continued

Number of registered radiologic technologists and technicians and ratios to population in each State: 1967—Continued

Geographic division and State	Number of registered radiologic technologists and technicians [1]				Population July 1, 1967 [2] (thousands)	Total registered radiologic technologists per 100,000 population
	Total	X-ray	Nuclear medicine	Radiation therapy		
East North Central	10,613	10,484	87	42	39,189	27.1
Illinois	2,944	2,916	17	11	10,887	27.0
Indiana	1,266	1,253	8	5	5,012	25.3
Michigan	2,004	1,972	21	11	8,608	23.3
Ohio	2,844	2,807	31	6	10,488	27.1
Wisconsin	1,555	1,536	10	9	4,194	37.1
West North Central	5,035	4,991	31	13	16,008	31.5
Iowa	881	880	1	...	2,772	31.8
Kansas	668	659	7	2	2,281	29.3
Minnesota	1,523	1,515	6	2	3,625	42.0
Missouri	1,134	1,116	12	6	4,587	24.7
Nebraska	454	448	4	2	1,443	31.5
North Dakota	171	170	1	...	632	27.1
South Dakota	204	203	...	1	668	30.5
Mountain	2,397	2,372	19	6	7,828	30.6
Arizona	422	417	4	1	1,637	25.8
Colorado	948	934	12	2	2,012	47.1
Idaho	182	181	...	1	701	26.0
Montana	182	180	...	2	699	26.0
Nevada	125	125	...	...	436	28.7
New Mexico	223	223	...	...	1,002	22.3
Utah	229	226	3	...	1,022	22.4
Wyoming	86	86	...	...	319	27.0
Pacific	6,783	6,696	51	36	25,212	26.9
Alaska	55	55	...	...	271	20.3
California	5,136	5,059	48	29	18,992	27.0
Hawaii	160	159	1	...	760	21.1
Oregon	633	629	...	4	1,981	32.0
Washington	799	794	2	3	3,208	24.9
Puerto Rico	26	26	...	...	2,697	1.0

---

[1] Includes both active and inactive technologists and technicians.

[2] State figures may not add to totals because of rounding.

[3] Includes the United States and Puerto Rico.

Source: U.S. Department of Health, Education, and Welfare; Public Health Service; National Center for Health Statistics. Health Resources Statistics, 1968. Public Health Service Publication No. 1509. Washington, U.S. Government Printing Office, 1968.

U.S. Bureau of the Census. Population Estimates. Current Population Reports P–25, Nos. 392, 414.

Public Health

Schools of public health primarily train physicians, nurses, engineers, and other professional health workers who have already completed their basic professional training. Many of them are employees of Federal, State, and local health agencies who are sent by their employing agencies to receive special public health training.

Under the Public Health Service Act, as Amended, Sections 306 and 309, the Public Health Service is authorized to support traineeships for professional public health personnel and project grants for graduate training in public health.

Table 126

In the past some schools of public health have offered undergraduate training leading to a bachelor's degree as well as graduate training leading to a master's or doctor's degree. The undergraduate programs are being phased out.

The number of accredited schools of public health has increased from 11 in 1959–60 to 15 in 1967–68. Schools of public health are accredited by the American Public Health Association.

Schools of public health in the United States offer a wide variety of degrees at both the master's and doctor's level but two-thirds of the 1,298 degrees awarded in 1967–68 were master of public health (M.P.H.). At the higher level the Ph. D. was the most frequent degree awarded.

The number of graduate degrees awarded has increased 137 percent since 1959–60. Although the number of doctor's degrees has tripled in that time the proportion at the higher level has increased only slightly, from 6 to 7 percent of the total.

Table 126

Accredited schools of public health and degrees awarded: selected years 1949–50 through 1967–68

Academic year	Number of schools [1]	Graduate degrees awarded			Bachelor's degrees awarded
		Total [2]	Doctor's	Master's	
1949–50	10	456	24	432	....
1954–55	11	394	26	368	116
1959–60	11	548	31	517	108
1960–61	12	592	27	565	99
1961–62	12	715	30	685	115
1962–63	12	769	29	740	137
1963–64	12	869	61	808	119
1964–65	12	1, 030	52	978	110
1965–66	13	1, 079	81	998	72
1966–67	13	1, 046	71	975	....
1967–68	15	1, 298	91	1, 207	....

[1] Includes accredited schools in the United States and Puerto Rico granting degrees in specified year.

[2] Data for 1954–55 and for 1959–60 through 1961–62 exclude the University of Puerto Rico.

Source: House of Representatives, 85th Cong., 1st sess., Committee on Interstate and Foreign Commerce. Medical School Inquiry, Staff Report Containing Background Information Relating to Schools of Medicine, Dentistry, Osteopathy, and Public Health. Washington, U.S. Government Printing Office, 1957.

Third National Conference on Public Health Training. Report to the Surgeon General. Public Health Service Publication No. 1728. Washington, U.S. Government Printing Office, 1967.

Troupin, James L. Schools of Public Health in the United States and Canada (year ending June 1968). New York, American Public Health Association (mimeo), also prior annual reports.

Table 127 and Figure 16

The 15 accredited schools of public health in 1967–68 were located in 12 States and Puerto Rico. Of the nine geographic divisions in the United States the East South Central and Mountain States have no schools of public health. There are three schools of public health in California.

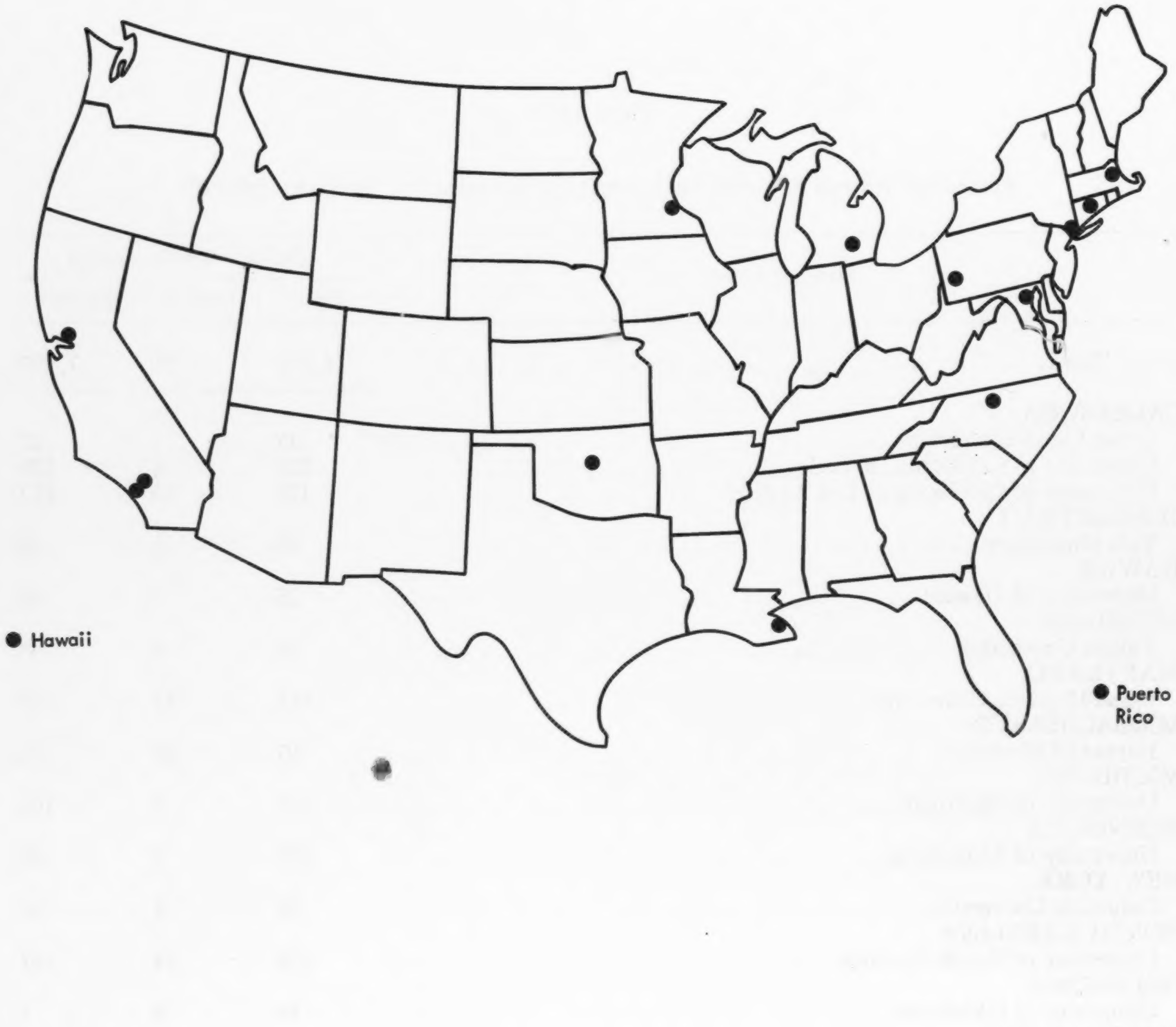
Table 127

Accredited schools of public health and degrees awarded, by State: 1967–68

State and school	Graduate degrees awarded		
	Total	Doctor's	Master's
Total	1,298	91	1,207
CALIFORNIA			
Loma Linda University	17	....	17
University of California, Berkeley	124	4	120
University of California at Los Angeles	122	10	112
CONNECTICUT			
Yale University	45	1	44
HAWAII			
University of Hawaii	28	....	28
LOUISIANA			
Tulane University	50	2	48
MARYLAND			
Johns Hopkins University	111	23	88
MASSACHUSETTS			
Harvard University	97	12	85
MICHIGAN			
University of Michigan	171	3	168
MINNESOTA			
University of Minnesota	103	7	96
NEW YORK			
Columbia University	98	1	97
NORTH CAROLINA			
University of North Carolina	176	14	162
OKLAHOMA			
University of Oklahoma	10	6	4
PENNSYLVANIA			
University of Pittsburgh	70	8	62
PUERTO RICO			
University of Puerto Rico	76	....	76

Source: Troupin, James L. Schools of Public Health in the United States and Canada (year ending June 1968). New York, American Public Health Association (mimeo).

FIGURE 16.—Schools of public health in the United States: 1968-69.


● Hawaii
● Puerto Rico

U.S. GOVERNMENT PRINTING OFFICE : 1969 O—351-032

Earlier sections of—

HEALTH MANPOWER SOURCE BOOK SERIES (PHS Pub. No. 263)

Section 1. Physicians. By M. Y. Pennell and M. E. Altenderfer. 1952.
Section 2. Nursing Personnel. By Division of Nursing. Revised 1969.
Section 3. Medical Social Workers. By L. W. Knott, M. Y. Pennell, L. M. Smith, and R. Wadman. 1953.
Section 4. County Data from 1950 Census and Area Analysis. By M. Y. Pennell and M. E. Altenderfer. 1954.
Section 5. Industry and Occupation Data from 1950 Census, by State. By M. E. Altenderfer and M. Y. Pennell. 1954.
Section 6. Medical Record Librarians. By M. Y. Pennell, M. E. Altenderfer, and O. G. Johnson. 1955.
Section 7. Dentists. By E. H. Pennell and M. Y. Pennell. 1955.
Section 8. Dental Hygienists. By W. J. Pelton, E. H. Pennell, and H. M. Vavra. 1957.
Section 9. Physicians, Dentists, and Professional Nurses. By Divisions of Public Health Methods, Dental Resources, and Nursing Resources. 1959.
Section 10. Physicians' Age, Type of Practice, and Location. By W. H. Stewart and M. Y. Pennell. 1960.
Section 11. Medical School Alumni. By W. H. Stewart and M. Y. Pennell. 1961.
Section 12. Medical and Psychiatric Social Workers. By W. H. Stewart, M. Y. Pennell, and L. M. Smith. 1961.
Section 13. Hospital House Staffs. By W. H. Stewart and M. E. Altenderfer. 1961.
Section 14. Medical Specialists. By P. Q. Peterson and M. Y. Pennell. 1962.
Section 15. Pharmacists. By P. Q. Peterson and M. Y. Pennell. 1963.
Section 16. Sanitarians. By M. Y. Pennell, I. Light, and D. W. Taylor. 1963.
Section 17. Industry and Occupation Data from 1960 Census, by State. By R. A. Prindle and M. Y. Pennell. 1963.
Section 18. Manpower in the 1960's. By Divisions of Public Health Methods, Dental Public Health and Resources, and Nursing. 1964.
Section 19. Location of Manpower in 8 Occupations. By M. Y. Pennell and K. I. Baker. 1965.

NOTE: Sections 1–19 may be consulted at many major libraries in the United States. Section 2, revised 1969 is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.